Kaleidescape System

Installation Guide

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Section 1
Overview

The Kaleidescape Installation Guide describes how to prepare the site network, set up and configure system components, and add new components to an existing installation. This document also describes basic operation and user configuration.

Any Kaleidescape component can be used in any Kaleidescape System, regardless of the date of manufacture. Software updates are issued automatically via the Internet.

The Kaleidescape System

The Kaleidescape System is comprised of one or more **servers** connected via Ethernet to one or more **players**.

Note: Kaleidescape also offers a stand-alone Mini System (server and player combined).

Kaleidescape servers store movies and music and deliver this content to Kaleidescape players connected to audio and video equipment. The Kaleidescape System supports easy integration into audio, video and whole-house control systems, such as Crestron, AMX, Elan, and Philips Pronto.

A Kaleidescape System can be as simple as a single Kaleidescape server and player controlled with a handheld remote or can scale to multiple servers and players with integrated controls for lighting and screen masking.

System Components

Kaleidescape components are designed to be easy to install: simply connect the cables. Table 1-1 lists current Kaleidescape components.

Table 1-1 Currently Available Kaleidescape Components

Kaleidescape Component	Model Number	Description
1U Server	KSERVER-1500	One rack-unit server with up to four 2 TB Disk Cartridges. Holds up to 150 Blu-ray Discs or 900 DVDs.
3U Server	KSERVER-5000	Three rack-unit server with up to fourteen 2 TB Disk Cartridges. Holds up to 600 Blu-ray Discs or 3,600 DVDs.
Mini System	KSYSTEM-120	Complete Kaleidescape System in a single component with up to four 500 GB Mini Disk Cartridges. Holds up to 225 DVDs.
M500 Player	KPLAYER-M500	Movie player that imports and plays CDs, DVDs and Blu-ray Discs. **Note:** There are two versions of this player, M500-A and M500-B, depending on the Blu-ray Disc region.
M300 Player	KPLAYER-M300	Smaller version of the M500 Player without a disc tray, S-video, optical audio or RS-232. Plays imported CDs, DVDs and Blu-ray Discs. **Note:** There are two versions of this player, M300-A and M300-B, depending on the Blu-ray Disc region.
Music Player	KMUSIC-4000	Music player that supports up to four simultaneous, independent zones of high-quality audio. Can also be used to import CDs and DVDs.
Speed Reader	KSPEEDREADER-2	Bulk media importer that handles up to 280 discs in one session. **Note:** Imports DVDs and CDs but not Blu-ray Discs.

Data Protection

Every Kaleidescape server includes **RAID-K technology**, a proprietary technology developed by Kaleidescape to provide data protection for movies

and music. With RAID-K technology, a failed hard drive does not cause any loss of data.

Unlike other variations of RAID technology, RAID-K allows new drives with different storage capacities to be added to the array. However, RAID-K technology does NOT allow swapping disk cartridges between servers.

The 3U Server has an additional protection feature, a hot spare disk cartridge. If a drive fails, information on the failed disk is automatically rebuilt on the hot spare disk cartridge, and the Kaleidescape System continues to operate without loss of data protection.

The hot spare disk cartridge reduces urgent service calls, and provides peace of mind for marine or other remote installations.

System Control

A Kaleidescape System can be controlled by several types of control devices.

- Infrared (IR) remotes
- Touch panels
- Keypads
- iPhone or iPod software applications
- Web tablets

Kaleidescape provides control modules and templates as well as sample programs for several products from leading manufacturers. Kaleidescape also provides database files and IR codes for popular IR remotes. For more information on control systems, see Control Systems on page 98.

Installation Requirements

The equipment required to install a Kaleidescape System depends on the installation site and system configuration. Basic requirements fall into four categories. Figure 1-1 shows a typical Kaleidescape System installation.

- General equipment
- Network requirements
- Audio cables
- Video cables

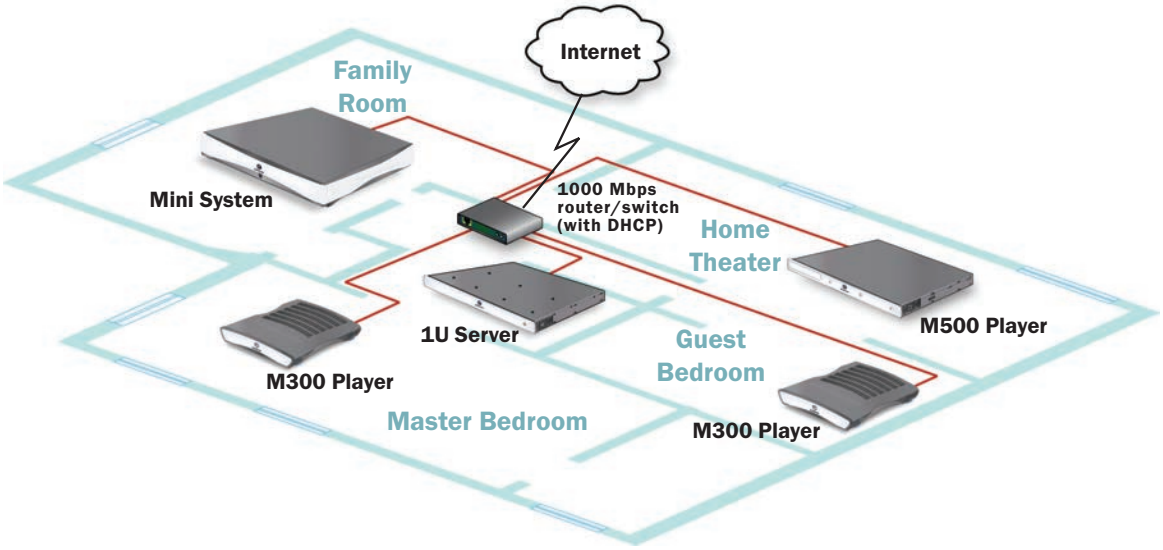


Figure 1-1 Typical Installation

General Equipment

The following basic items are required:

- #2 Phillips screwdriver to rack mount system components
- High-quality surge protector and sufficient outlets
- Computer with a web browser

Network Requirements

The site network must meet the following minimum requirements:

- High-speed Internet connection
- Gigabit Ethernet switch with sufficient ports
- Cat5 or better twisted-pair Ethernet cables with RJ45 connectors

For detailed network requirements, see Network Requirements on page 156.

Audio Cables

Kaleidescape movie players have up to four audio connectors, including a combined audio/video High-Definition Multimedia Interface (HDMI) connector.

For more information on audio installation, see Video and Audio Settings on page 71.

Video Cables

Some Kaleidescape players have up to four video outputs including a combined audio/video HDMI output.

For more information about video installation, see Video and Audio Settings on page 71.

Installation Locations

When installing Kaleidescape Systems, the following considerations must be addressed:

- Customer requirements
- Ventilation and clearance
- Proper grounding

For detailed information on the best places to install components, see Physical Installation on page 20.

Space Planning

All Kaleidescape components, except the Speed Reader, fit in standard 19 inch racks and ship with removable mounting brackets.

Note: Mini players also fit in a 19 in. rack when mounted on an optional Mini Player Rack-Mount Shelf.

When planning the site, the following criteria must be met:

- Components must have adequate ventilation
- All components require a 1 inch clearance in front and a 2 inch clearance at the back
- Front grilles must be unobstructed

Some components need more space if the rack has a front door.

- The 3U Server front panel opens outward from the top.
- The 1U Server has a removable front panel for disk cartridge access
- M500 Players, Music Players, and Mini Systems have disc trays that must be able to eject unobstructed.

Power Supplies

Kaleidescape component power supplies are universal input and operate on any nominal line voltage between 100–240 V, 50–60 Hz.

Power outlets must be grounded and preferably shielded from power surges and brownouts. Kaleidescape recommends a high-quality surge protector

for the server power source; a UPS is optional. See Table 3-1 on page 22 for a detailed list of component power consumption.

A/V Connections to the Kaleidescape Players

There are two options for installing Kaleidescape components.

- A/V closet with cables that run from player to the video display
- Same area as the display for (1) IR control, (2) disc tray access, and (3) short HDMI cable lengths

Note: Check manufacturer specifications of cables to the A/V equipment. Table 3-2 on page 24 lists cable length limits for optical and coaxial cables.

Unpacking and Inspection

The Kaleidescape System ships with components individually boxed. Check the packing list to verify that all components are included in the order.

Note: Be sure to save original packaging in case anything has to be shipped. Failure to use the original packaging for return shipments may void the warranty.

3U Server

The 3U Server ships with disk cartridges and blank cartridges already installed in the server. The server ships with an IEC-type AC power cord and screws for rack mounting.

1U Server

The 1U Server ships with disk cartridges in the shipping box that must be installed in the server. The server ships with an IEC-type AC power cord and screws for rack mounting.

M500 Player

The M500 Player ships in a single box with an IEC-type AC power cord, screws for rack mounting, a remote control and two AA batteries, and side panels wrapped in a separate pouch.

M300 Player

The M300 Player ships in a single box with the following items:

- Bracket for wall mounting the mini player
- Bracket for wall mounting the mini player power supply
- Power supply and IEC-type AC power cord
- Screws and drywall anchors for wall mounting brackets
- Remote control and two AA batteries

A Mini Player Rack-Mount Shelf contains a rack-mounting kit for mounting one or two mini players in a 19 in. rack. This shelf is available separately and can hold either the 1080p Mini Player or the M300 Player.

Music Player

The Music Player ships in a single box with an IEC-type AC power cord and screws for rack mounting.

Mini System

The Mini System ships with disk cartridges and blank cartridges already installed, in a single box with the following items:

- Remote control and two AA batteries
- IEC-type AC power cord
- Rack mounting kit including cooling duct, two rack ears, and screws for rack, duct and rack ears
- Ferrite bead for network cabling

Kaleidescape DVD Collections

DVD Collections ship in boxes containing approximately 100 DVDs.

Activating the System

The Kaleidescape System must be activated.

Until the Kaleidescape System is activated, the following reminder message appears when playing a movie that has been imported into the system:

Please activate your System at http://10.200.XXX.XX/activate
You can use your System 11 more times before you are required to activate it.
Press Select or Enter to clear this message for 60 minutes.

This message can be dismissed a limited number of times to perform video calibration or other testing. When the number of dismissals reaches zero, the text remains and cannot be dismissed. At this point, the customer must activate the system to remove the activation message.

Note: Movies or albums can be played from the tray without the message appearing. Blu-ray Discs, DVDs and CDs can also be imported before activation.

This message disappears once activation is verified over the Internet.

Use the following procedure to activate the system.

Note: Activation must be performed by the system owner, not the dealer.

1. Open a web browser and go to www.kaleidescape.com/activate. The **Activate your Kaleidescape System** page appears. See Figure 1-2.

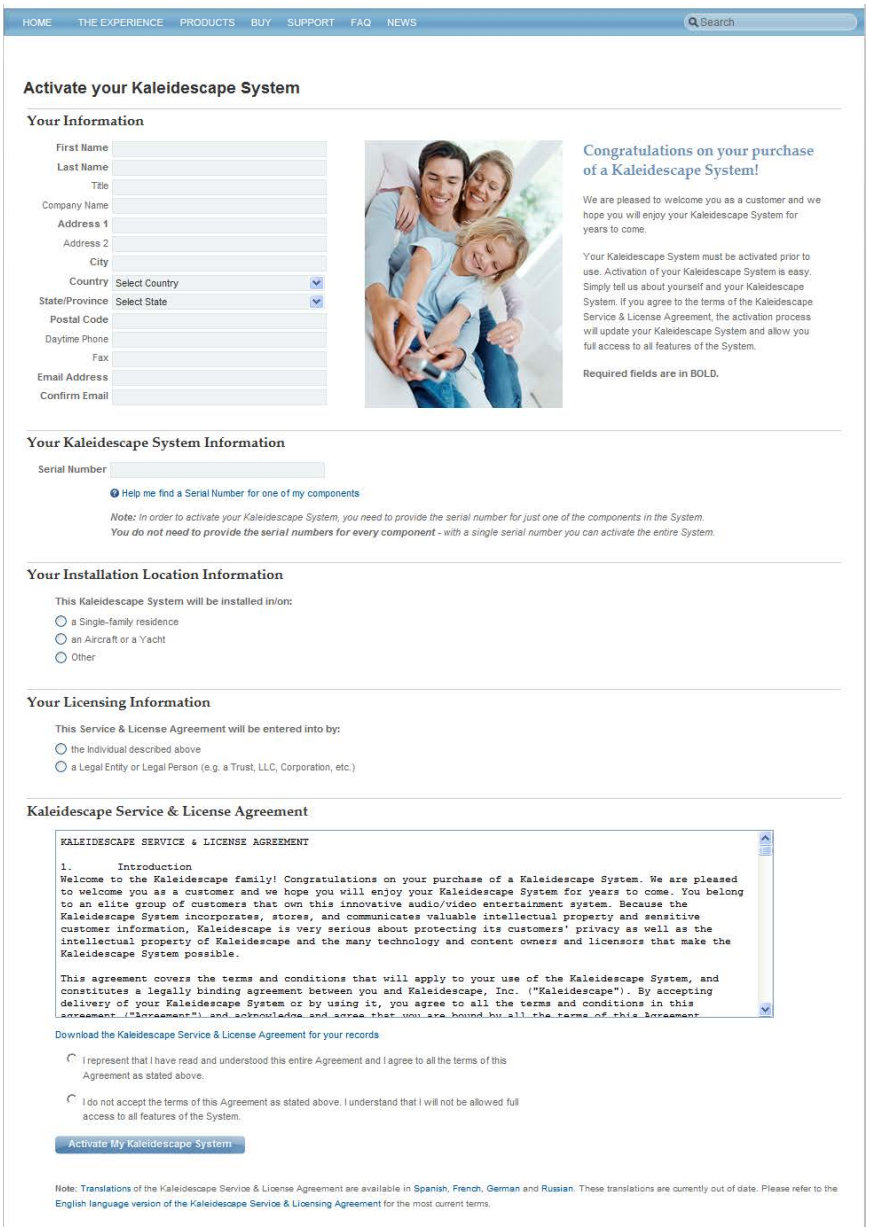

HOME
THE EXPERIENCE
PRODUCTS
BUY
SUPPORT
FAQ
NEWS
Search
Activate your Kaleidescape System
Your Information
First Name
Last Name
Title
Company Name
Address 1
Address 2
City
Country
Select Country
State/Province
Select State
Postal Code
Daytime Phone
Fax
Email Address
Confirm Email
Congratulations on your purchase of a Kaleidescape System!
We are pleased to welcome you as a customer and we hope you will enjoy your Kaleidescape System for years to come.
Your Kaleidescape System must be activated prior to use. Activation of your Kaleidescape System is easy. Simply tell us about yourself and your Kaleidescape System. If you agree to the terms of the Kaleidescape Service & License Agreement, the activation process will update your Kaleidescape System and allow you full access to all features of the System.
Required fields are in BOLD.
Your Kaleidescape System Information
Serial Number
Help me find a Serial Number for one of my components
Note: In order to activate your Kaleidescape System, you need to provide the serial number for just one of the components in the System.
You do not need to provide the serial numbers for every component - with a single serial number you can activate the entire System.
Your Installation Location Information
This Kaleidescape System will be installed in/on:
a Single-family residence
an Aircraft or a Yacht
Other
Your Licensing Information
This Service & License Agreement will be entered into by:
the Individual described above
a Legal Entity or Legal Person (e.g. a Trust, LLC, Corporation, etc.)
Kaleidescape Service & License Agreement
KALEIDESCAPE SERVICE & LICENSE AGREEMENT
1. Introduction
Welcome to the Kaleidescape family! Congratulations on your purchase of a Kaleidescape System. We are pleased to welcome you as a customer and we hope you will enjoy your Kaleidescape System for years to come. You belong to an elite group of customers that own this innovative audio/video entertainment system. Because the Kaleidescape System incorporates, stores, and communicates valuable intellectual property and sensitive customer information, Kaleidescape is very serious about protecting its customers' privacy as well as the intellectual property of Kaleidescape and the many technology and content owners and licensors that make the Kaleidescape System possible.
This agreement covers the terms and conditions that will apply to your use of the Kaleidescape System, and constitutes a legally binding agreement between you and Kaleidescape, Inc. ("Kaleidescape"). By accepting delivery of your Kaleidescape System or by using it, you agree to all the terms and conditions in this
Download the Kaleidescape Service & License Agreement for your records
I represent that I have read and understood this entire Agreement and I agree to all the terms of this Agreement as stated above.
I do not accept the terms of this Agreement as stated above. I understand that I will not be allowed full access to all features of the System.
Activate My Kaleidescape System
Note: Translations of the Kaleidescape Service & License Agreement are available in Spanish, French, German and Russian. These translations are currently out of date. Please refer to the English language version of the Kaleidescape Service & Licensing Agreement for the most current terms.

Figure 1-2 Activation Window

2. Enter user information.
3. Scroll down and enter system information. Note that entering the serial number for a single component activates the entire system.
4. Select the button to agree to the terms of the Kaleidescape Service & License Agreement (SLA), then click on the **Activate my Kaleidescape System** button at the bottom of the window.

A message appears confirming a successful activation. See Figure 1-3.

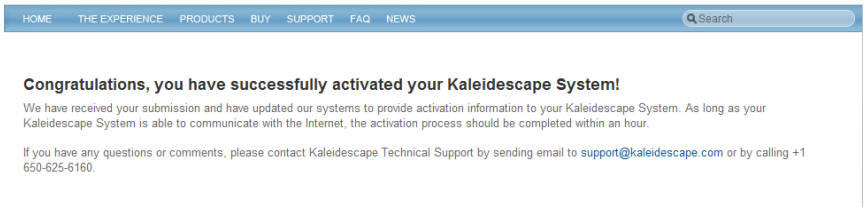

HOME
THE EXPERIENCE
PRODUCTS
BUY
SUPPORT
FAQ
NEWS
Search
Congratulations, you have successfully activated your Kaleidescape System!
We have received your submission and have updated our systems to provide activation information to your Kaleidescape System. As long as your Kaleidescape System is able to communicate with the Internet, the activation process should be completed within an hour.
If you have any questions or comments, please contact Kaleidescape Technical Support by sending email to support@kaleidescape.com or by calling +1 650-625-6160.

Figure 1-3 Activation Confirmation Message

5. Keep the Kaleidescape System on and connected to the Internet until the reminder message disappears.

When activation is complete, Kaleidescape sends an email message back verifying activation.

Section 2
Quick Start

This section describes the basic steps required to connect and test Kaleidescape System components. If problems occur, refer to Troubleshooting on page 107.

Step 1 – Verify Network Connections

All Kaleidescape components must be connected to the same local network. Connect the components to a 1000Base-T network switch. These instructions assume there is a router or DHCP server on the network to assign DHCP addresses. For more advanced network configuration, see Appendix C on page 156.

For initial configuration, and to receive software, Movie Guide and Music Guide updates, the network must be connected to the Internet. Users must also complete the activation process at www.kaleidescape.com/activate.

Test the network connection for each Kaleidescape component before installing by connecting the network cable for the component to a laptop, disconnecting the laptop from any WiFi networks, and opening a new, non-cached web page. If the page fails to load, troubleshoot the network.

Note: Connecting the server to a 100Base-TX switch port limits the server to seven simultaneous DVD playback zones or one Blu-ray zone and can slow down imports.

Step 2 – Set Up the Server

Kaleidescape players require a Kaleidescape server to operate. Always set up servers first.

Note: If installing the **Kaleidescape Mini System**, refer to the *Quick Install Guide* packaged with the system.

1. Unpack and check against the packing list.
   a. **1U Server** –
      - Remove front panel and mount server chassis.

- Check disk cartridges for sticking latches, insert into server, then press each disk cartridge firmly to verify that each is completely seated. Replace front panel.

b. **3U Server** –

- Open the front panel, remove disk cartridges and place on cushioned, anti-static surface. Do not stack cartridges.
- Mount server.
- Check disk cartridges for sticking latches, reinsert into server, and press each disk cartridge firmly to verify that each is completely seated. Close the front panel.

2. Connect one end of an Ethernet cable into the server **NETWORK** port and plug the other end into a 1000Base-T network switch.

   Connect the server AC power cable to a high-quality surge protector with a line-noise filter. Front panel status lights glow blue immediately. After about two minutes, disk cartridge status lights glow blue, turn off, then turn on again, and the server is ready to use.

   Check the color of the network indicator light on the server network port and confirm the correct color for a 1000Base-T connection.

   The **left** light indicates activity and is orange when a link is established. The **right** light blinks green for activity on a 1U Server and blinks amber on a 3U Server.

   The 1U Server and 3U Server power supplies are universal input and operate on any nominal line voltage between 100–240 V, 50–60 Hz.

3. Power on the server if front panel does not light.

   a. **1U Server –** Press the **POWER** button on the front panel.

   b. **3U Server** – Open the front panel and press the **POWER** button.

   If any status on the front of the server is amber, see Troubleshooting Amber Lights on page 108.

4. Open a web browser on a computer connected to the same network and enter
   http://my-kaleidescape/installer (Windows) or
   http://my-kaleidescape.local/installer (Mac) to bring up the browser interface.

5. Select the **COMPONENTS** tab and confirm that the serial number for the server on the components page matches the serial number on the server. (The serial number is located on the back of the server and behind the front panel.)

6. If the system has more than one server, select the **GROUPS** tab and assign servers to the correct groups. See Viewing and Changing Groups on page 95 for more information on assigning groups.

Step 3 – Set Up the Movie and Music Players

1. Unpack and check against the packing list.
2. Mount the player according to the instructions provided with the component.
3. Plug one end of an Ethernet cable into the player **NETWORK** port and plug the other end into a 1000Base-T network switch. Verify that the switch is connected to the same network as the server.
4. Connect audio and video cables as appropriate for the installation.
5. Connect the player AC power cable to a high-quality surge protector with a line-noise filter. The front panel status lights of movie players glow blue in a few seconds. If a Music Player does not glow when plugged in, press the **POWER** button to turn it on.

   After about 30 seconds, longer during a software upgrade, the components pulse twice to signal that the component is ready to use.

   (Kaleidescape player power supplies are universal input and operate on any nominal line voltage between 100–240 V, 50–60 Hz.)

   Note: If the front panel does not turn blue when power is connected, verify that the power is on by pressing the **POWER** button on the player or the remote. If the player glows amber, verify that the server is running, verify network connections, then refer to Troubleshooting Amber Lights on page 108.
6. Open a web browser on the same network and enter http://my-kaleidescape/installer (Windows) or http://my-kaleidescape.local/installer (Mac) to bring up the browser interface.
7. Select the **GROUPS** tab and add the player to the same group as the server.

   Note: If there is more than one server on the network, the player glows amber until assigned to a group.
8. Select the **COMPONENTS** tab and set appropriate audio, video and other preferences as applicable based on installation requirements.
9. Turn on A/V equipment. The Kaleidescape logo or the onscreen user interface appears on the display when the A/V equipment is set to the correct input for the Kaleidescape system.

10. To import content on a Kaleidescape M500 Player, press the **EJECT** button on the front panel and place a DVD, Blu-ray Disc or CD in the tray. Press the **IMPORT** button to close the tray. Front panel lights begin pulsing, indicating that the import has begun.
11. Test the movie player using either the browser interface or an IR remote control. Test the music player using the browser interface.
    a. To use the browser interface, open a web browser and go to http://my-kaleidescape (Windows) or http://my-kaleidescape.local (Mac).

       Select the **HOME** tab. The **CONTROL PANEL** is in the lower right corner. Click the link (links are colored amber) for the player being tested.

    b. To use an IR remote other than the Kaleidescape Remote, program the remote for the Toshiba or Kenwood DVD player code set. For a list of all IR codes (in hex) available from Kaleidescape, or for the CCF file, go to www.kaleidescape.com/go/ir.

Kaleidescape Support

For detailed information refer to the appropriate section of the installation guide or search the knowledge base at www.kaleidescape.com/support.

If additional help is required, contact Kaleidescape Support.

- Send an email message to **support@kaleidescape.com**.
- Call the Kaleidescape support line at **+1 (650) 625-6160**.

When contacting Kaleidescape Support, be prepared to provide the serial number of the Kaleidescape server. The serial number label is located on the back of all components, and behind the front panels of Kaleidescape servers.

Section 3
Physical Installation

Planning the Installation

Ventilation and Clearance

All Kaleidescape components, except the Kaleidescape M300 Player, fit standard 19-inch racks and ship with removable mounting brackets. The Mini Player Rack-Mount Shelf is an optional accessory kit for mounting up to two M300 Players in a 19-inch rack.

Figure 3-1 shows minimum clearance requirements. For individual component dimensions and weights, refer to Appendix A, Product Specifications on page 124.

Use the following guidelines when installing system components to ensure proper clearance and ventilation. These guidelines apply to all installations including rack mounting.

1. Mount components in a location with adequate ventilation.
2. Check for proper grounding if installing components in a rack.
3. Maintain a 2 in. (5 cm) clearance in back, and a 1 in. (2.5 cm) clearance in front and on the sides.
4. Ensure that front grilles are unobstructed.
5. Verify that the mounting site allows sufficient clearance for the **3U Server** front panel which opens outward from the top.
6. Install the **1U Server** so that the front panel can be easily removed to access disk cartridges.
7. Verify that there is sufficient space for the Kaleidescape M500 Player, Music Player, and Mini System disc trays to be able to slide out completely.

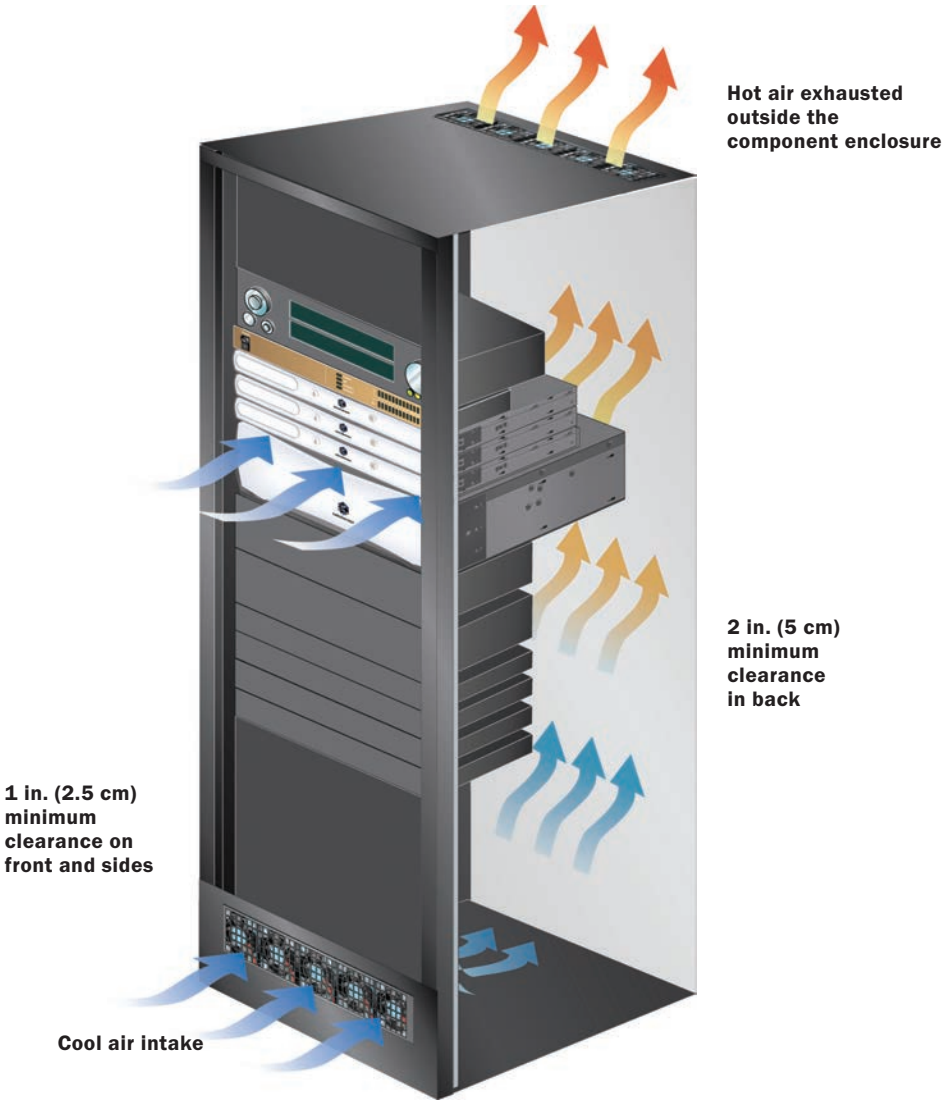

Hot air exhausted outside the component enclosure
2 in. (5 cm) minimum clearance in back
1 in. (2.5 cm) minimum clearance on front and sides
Cool air intake

Figure 3-1 Minimum Clearance Requirements

Power Requirements

Kaleidescape component power supplies are universal input and operate on any nominal line voltage between 100–240 V, 50–60 Hz. Verify that power outlets are grounded, preferably shielded from power surges and brownouts.

Kaleidescape recommends a grounded outlet with a high-quality surge protector for the power source for players and servers. A UPS is optional for servers. Table 3-1 lists power requirements for each component.

Table 3-1 Component Power Requirements

Component	Power Consumption	Maximum Current Draw
1U Server	66 W typical consumption with four 2 TB Disk Cartridges (86 W max)	1.0 A @ 100 V 0.42 A @ 240 V
3U Server	183 W typical consumption with fourteen 2 TB Disk Cartridges (205 W max)	3 A @ 100 V 1.3 A @ 240 V
Mini System	85 W typical consumption with four 500 GB Mini Disk Cartridges (74 W standby; 90 W max)	1.5 A @ 100V 0.63 A @ 240 V
M500 Player	36 W typical consumption (27 W standby; 44 W max)	0.37 A @ 120 V 0.18 A @ 240 V
M300 Player	29 W typical consumption (19 W standby; 30 W max)	0.25 A @ 120 V 0.13 A @ 240 V
Music Player	14 W typical power consumption (14 W standby; 20 W max)	0.5 A @ 100 V 0.21 A @ 240 V

System Design

Before beginning the installation, determine the type of the display and audio systems that will connect to Kaleidescape components.

Kaleidescape Systems support combinations of the following outputs:

- **Video**
  - High-Definition Multimedia Interface (HDMI)
  - Component
  - S-Video
  - Composite
- **Audio**
  - HDMI (Digital stereo or multi-channel)
  - Coaxial (Digital stereo or multi-channel)
  - Optical (Digital stereo or multi-channel)
  - Analog (Stereo)

A Gigabit network is suggested for all Kaleidescape Systems, and required if Blu-ray movies are played in more than one room at the same time.

Kaleidescape recommends using a checklist for connections to expedite the installation process. For a sample checklist, see Appendix D Installation Checklist on page 161.

Figure 3-2 shows two basic network configurations.

Note: If the existing switch has too few ports, or Ethernet cable lengths to the switch exceed 328 ft (100 m), add an extra switch to the network. Do NOT substitute a router. Connect additional switches to the switch. Do NOT use the router to connect two switches or bandwidth suffers.

Note: Kaleidescape components are accessed through a computer browser interface, which MUST be on the same IP subnet. A second router creates an additional subnet and prevents communication.

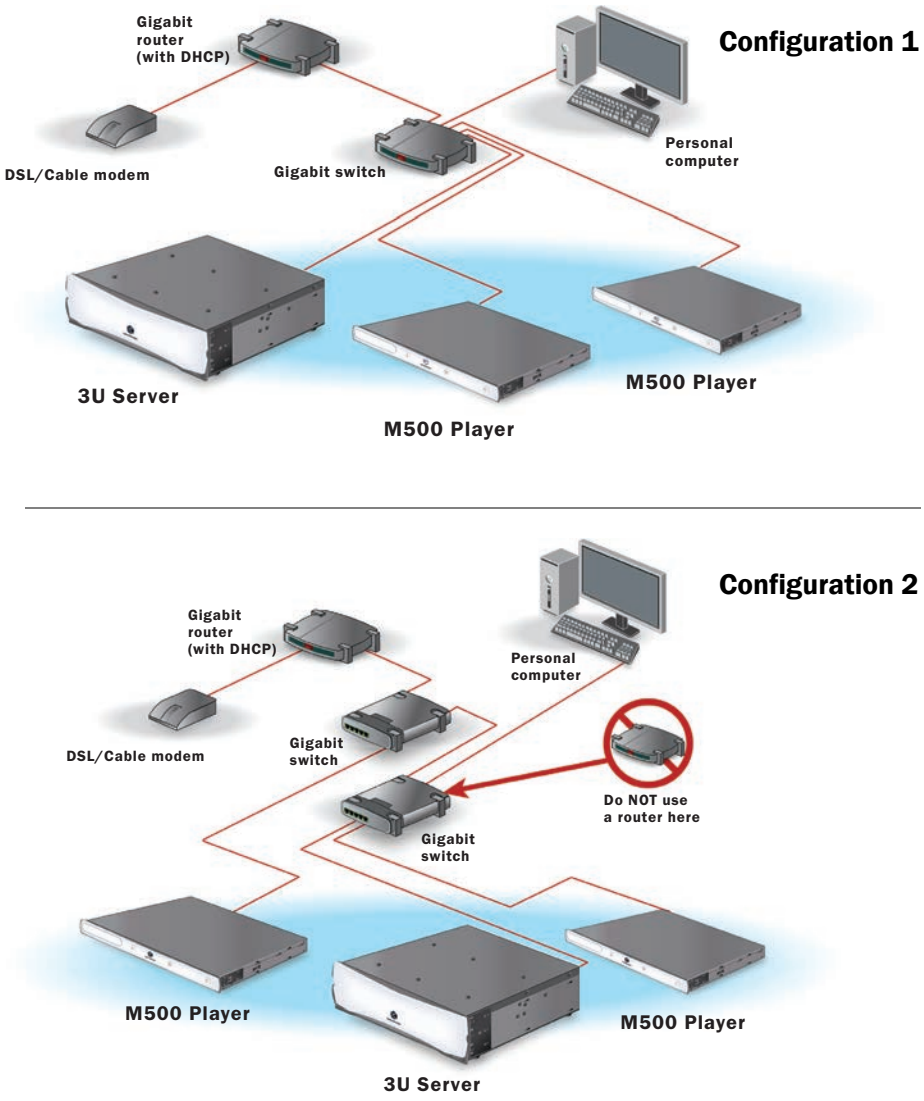


Figure 3-2 Basic Network Configurations

A/V Connections to Kaleidescape Players

Kaleidescape players can be installed in either of the following locations:

- In an A/V closet with cables running from the player to the display
- In the same area as the A/V equipment

Locating the player in the same area as the A/V equipment allows for direct control with an IR remote to the IR receiver on the front of the player and convenient access to the disc tray. The player must be located so that IR signals can be readily received, or fitted with an IR emitter/IR extension cable connected to a remote IR receiver.

The Kaleidescape M500 Player imports Blu-ray Discs, DVDs, and CDs, and supports direct playback of a disc in a tray. Locating these players near a display area is ideal.

If the movie player is controlled remotely, whether through an IR receiver, a programmable controller, or the control panel in the browser interface, A/V cable length limits become a major installation consideration.

The Music Player has four audio zones which can be controlled independently. Zones are usually distributed through a distributed audio system and controlled through a programmable controller.

Check specifications for both cables and A/V equipment. Table 3-2 lists the cable requirements for movie players depending on the audio option.

Note: **Cable lengths are limited by the cable and signal type.**

- For example, with audio signals, optical cables are typically limited to less than 16 ft (5 m) and coaxial cables are typically limited to less than 32–50 ft (10–15 m).
- Always use a certified high speed (category 2) HDMI cable. The longer the HDMI cable, the more important the quality of the manufacturing. For cable runs longer than 10 meters, a solution such as an active cable, repeater, amplifier, or Cat5/6 or fiber extender is required.

Table 3-2 Cable Requirements for Kaleidescape Players

Signal	Player Connections	Cable	Cable Connectors
HDMI (video/audio)	HDMI	HDMI cable	19-pin HDMI Type A (outside dimensions: 13.9 mm × 4.45 mm)
		HDMI-DVI adapter + DVI cable (video only)	
Composite (video)	Yellow RCA	RCA video cable	Single RCA plug

Table 3-2 Cable Requirements for Kaleidescape Players (Continued)

Signal	Player Connections	Cable	Cable Connectors
Component (video)	Three RCA connections colored green (Y), blue (Pb), and red (Pr)	75-ohm YP_bP_r analog component video cable	Three RCA plugs
S-Video (video)	S-Video	S-Video cable	S-Video plug (4-pin mini-DIN) (not available on the M300 Player)
Digital coaxial (audio)	Orange RCA	Digital audio coaxial cable	RCA plug
Digital optical (audio)	TosLink (not available on the M300 Player)	Digital audio optical cable	TosLink plug (not available on the M300 Player)
Analog stereo (audio)	Red and white RCA	Analog stereo audio cable	RCA plugs

The figures below show cable connections for Kaleidescape components.

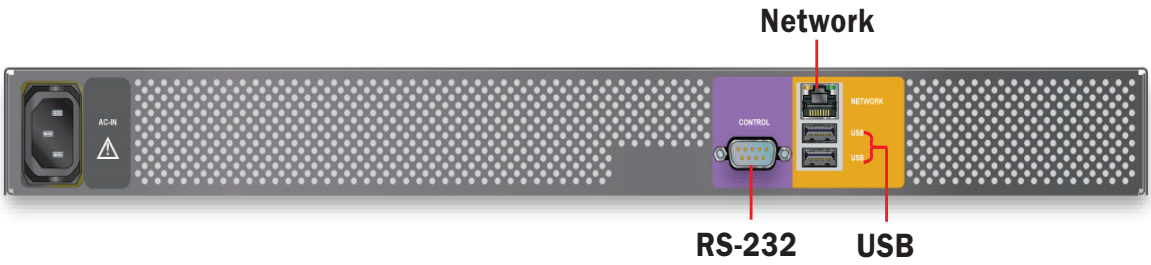


Figure 3-3 1U Server Connections

Note: The 1U Server RS-232 connection is for diagnostic use and the USB ports are reserved.

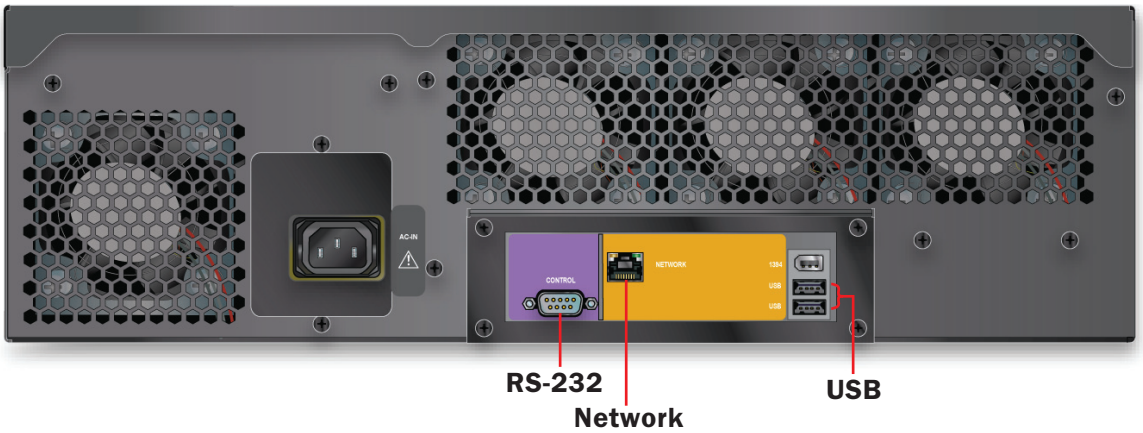


Figure 3-4 3U Server Connections

Note: The 3U Server RS-232 connection is for diagnostic use. The USB ports and FireWire port are reserved.

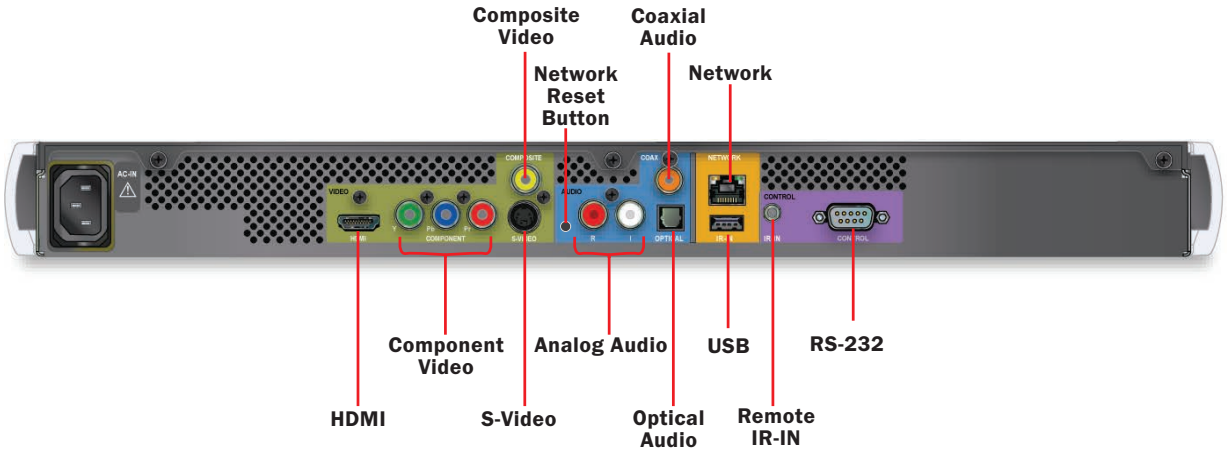


Figure 3-5 M500 Player Connections

Note: The USB port on the M500 is reserved.

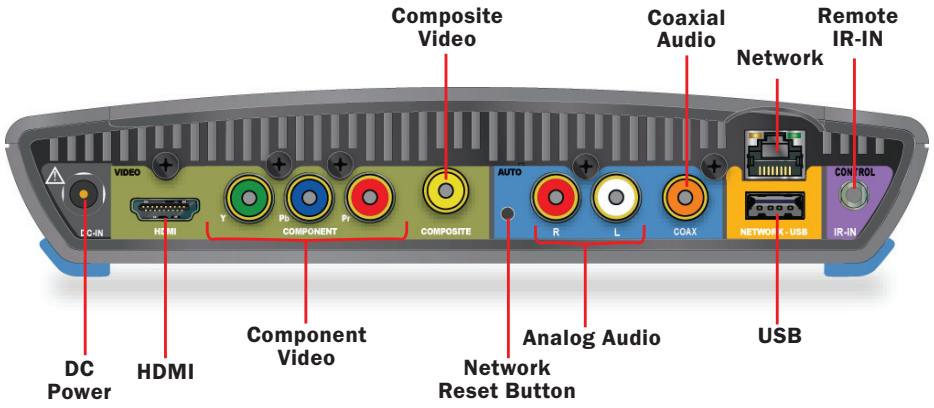


Figure 3-6 M300 Player Connections

Note: The M300 USB port is reserved.

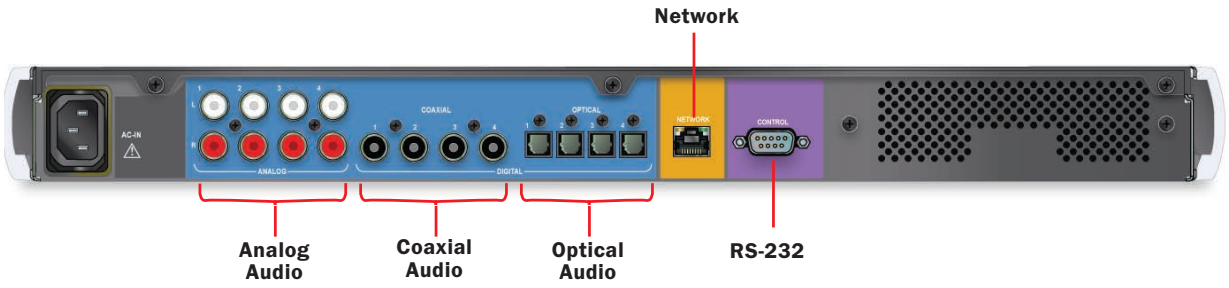


Figure 3-7 Music Player Connections

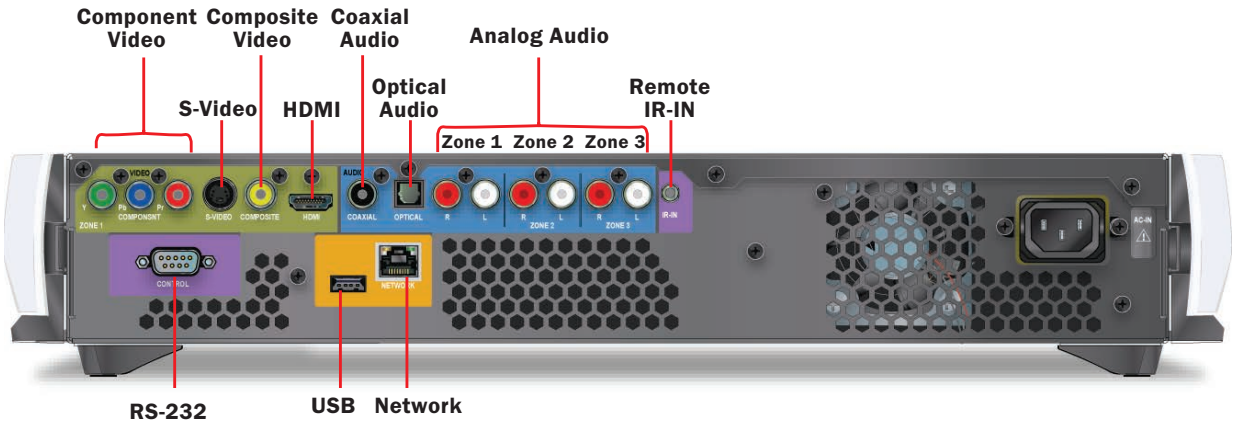


Figure 3-8 Mini System Connections

Note: The Mini System USB port is reserved.

Installing System Components

The Kaleidescape installation can be as simple as plug-and-play. Or apply optional settings such as local time zone and parental controls, and the system is ready to deliver movies and music. Disk cartridges can be added to expand server capacity as needed.

Set up the Kaleidescape server before other system components. When installing a system with multiple servers, set up all the servers before setting up other components.

Rack Mounting Components

Servers

Use the following procedures to rack mount a Kaleidescape server.

1. Verify that the rack is strong enough to bear the combined weight of the Kaleidescape components.
2. Position the server in the rack.

WARNING

A 3U Server weighs 58 lbs (26.3 kg) with fourteen disk cartridges installed. Use two people to lift and mount a fully loaded 3U Server.

A 1U Server weighs 24 lbs (10.9 kg) with four disk cartridges installed. Always use proper lifting techniques.

3. Attach the server to the rack by fastening rack ears with the four screws provided. A Phillips #3 screwdriver is required.
4. Check that disk cartridges are firmly seated.

CAUTION

Disk cartridges are sensitive and susceptible to damage from shock. Use care when handling. Do not bump or drop.

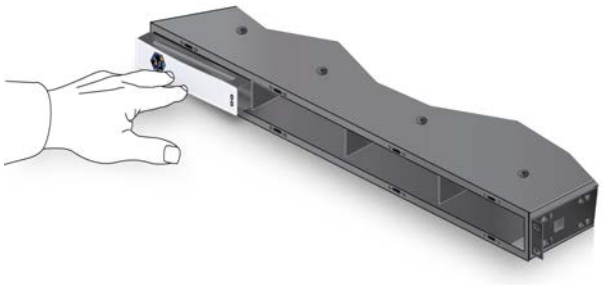
Disk cartridges are susceptible to electrostatic discharge. Be careful not to touch the exposed connector at the back of the disk cartridge. Static electricity can damage the electronics inside the disk cartridge. Always store and ship disk cartridges in an antistatic bag.

Note: **Do NOT operate the server with empty slots.** Open slots compromise the cooling system. Insert blank cartridges into empty slots.

a. **1U Server** - Unpack disk cartridges and blanks. Save packaging.

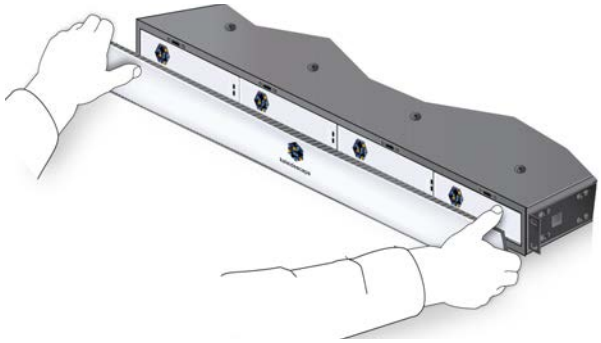
- Remove the front panel by tugging gently on both sides.

- Install disk cartridges, then blanks. Insert the first disk cartridge into the first storage slot and push the disk cartridge in until the disk cartridge clicks into place. Refer to Removing and Adding Disk Cartridges or Blanks on page 55 for a detailed procedure.



- Press firmly, then press once more to be sure disk cartridges are completely seated.

- Replace the front panel aligning the six posts on the back of the front panel with the six slots in the chassis and push the panel to snap the panel into place.



b. **3U Server** - Open the server front panel and push firmly on disk cartridges to verify that pre-installed disk cartridges and blanks have not become loose during shipment.

Kaleidescape Players

Use the following procedure to rack mount Kaleidescape players.

M500 Player and Music Player

Note: The M500 Player can also be installed on a tabletop. See Tabletop Installation for the M500 Player on page 45.

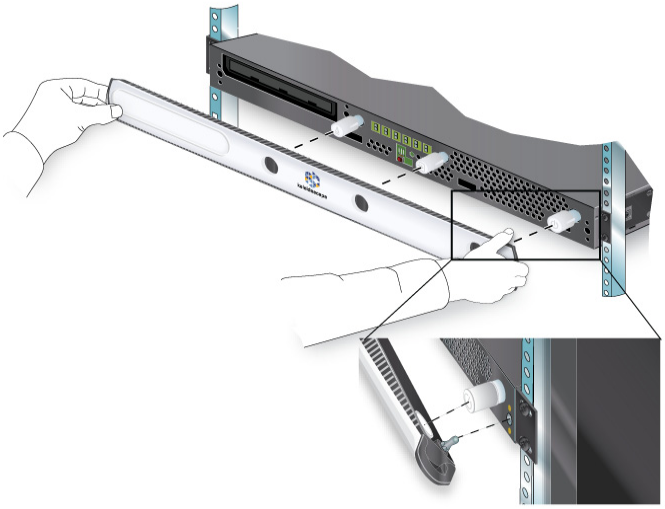
1. Rack mount the player.

   a. Tug gently on both sides of the front panel until panel comes off. Set the panel aside.

   b. Position the player in the rack and fasten to the rack by the mounting ears with the screws provided.

Note: Player buttons can come loose or come out when the front panel is removed. Replace button caps so that the curvature of the buttons matches the curvature of the front cover and the icons are oriented correctly.

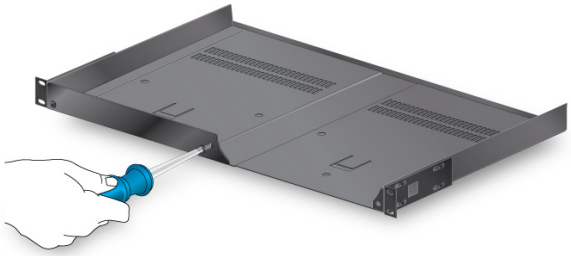
c. Replace the front panel. Align the three pegs in the front panel with the holes in the player chassis and press until the front panel snaps into place.



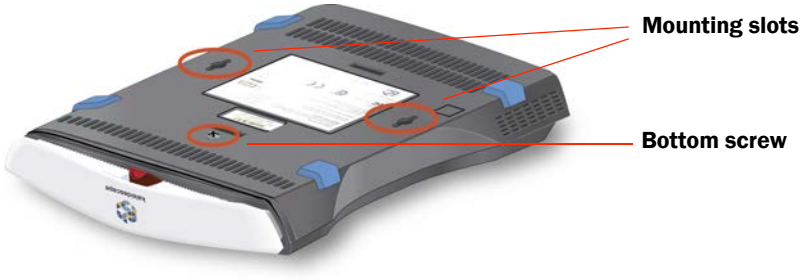
M300 Player

Rack mount the M300 Player with an optional rack-mount shelf. This shelf holds up to two M300 Players and fills one rack unit.

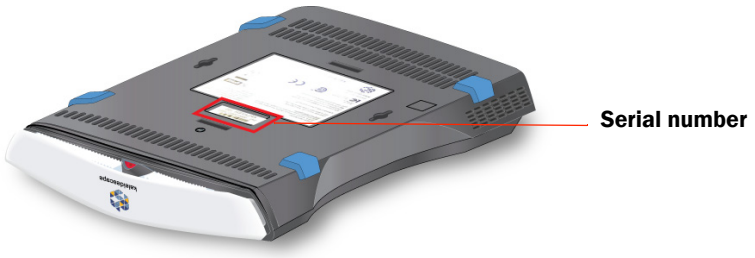
1. If installing two M300 Players, remove the two screws that secure the blanking plate, then the blanking plate.



2. Remove the bottom screw from the M300 Player.



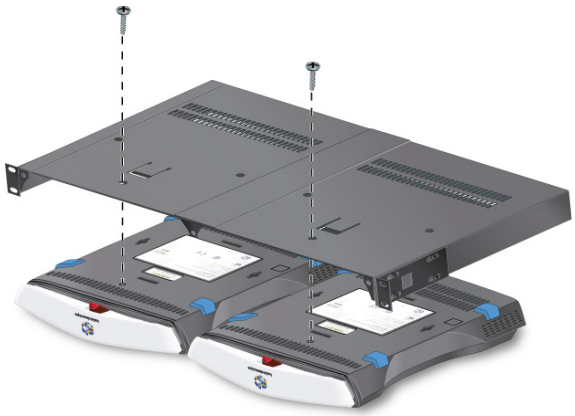
3. The player serial number is not visible after the player is mounted. Attach the extra serial number label (included in the packing box) to an area where the number can be read.



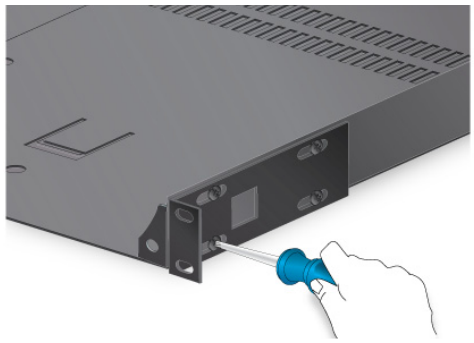
4. Align the mounting slots with the shelf pegs, and slide the player towards the back of the shelf until the player clicks into place.

   Repeat if installing a second player.

5. Turn shelf over and attach retaining screws. Do NOT use the screws that were removed.



6. Mount the rack on the shelf in the best forward position.
7. Adjust the rack ears so that rack ears are equally aligned from the front of the shelf. Loosen the four side screws, adjust the rack ears and tighten.



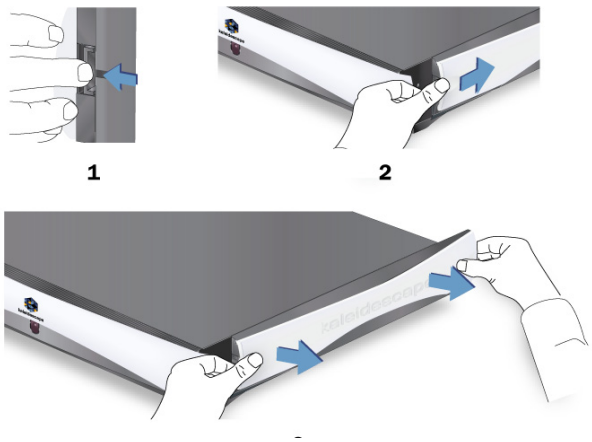
8. Fasten the shelf to the rack using the lower holes in the rack ears.
9. Install screws in the upper two holes to secure the shelf.

Note: The Kaleidescape M300 Player can also be mounted against a wall. See Wall Mounting the M300 Player on page 46.

Mini System

Use the following procedure to install the rack mount kit and mount the Mini System.

1. Press the tab on the rear of the side panel and slide the panel towards the back of the Mini System to remove.



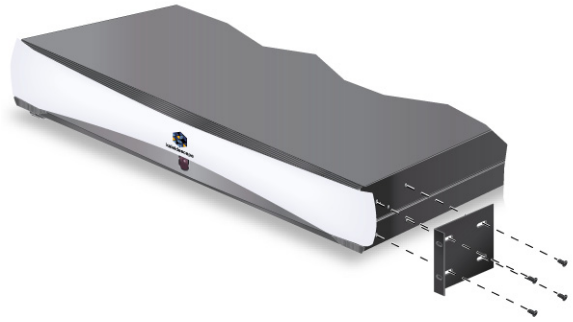
2. Repeat for the remaining side panel.
3. Turn the Mini System over carefully. Use a #2 Phillips screwdriver to remove the four feet at the corners.

CAUTION

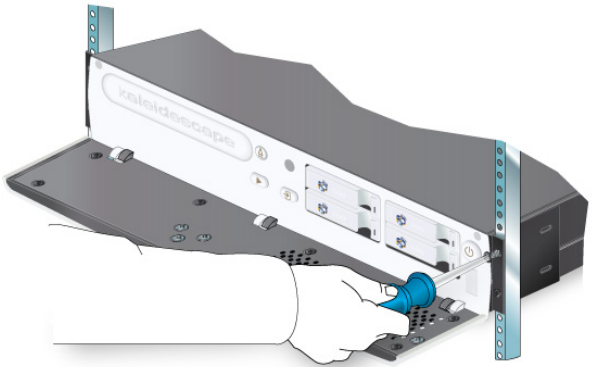
Use care when handling the Mini System. The Mini System contains fragile disk cartridges.

4. Position the cooling duct with the flat side down and the grille facing the front of the system.
5. Fasten the cooling duct to the Mini System with the six cooling duct screws packaged with the system. Use a #2 Phillips screwdriver; be careful not to overtighten the screws (2 in-lbs maximum torque).

6. Turn the Mini System right side up.
7. Align the rack ears with arrows pointing downwards. Attach rack ears to each side of the Mini System with the rack ear screws.



8. Attach to rack in the best forward horizontal position. Be sure rack ears are equally aligned from the front.



Connecting Components to the Network

Use the following procedures to connect components to the network.

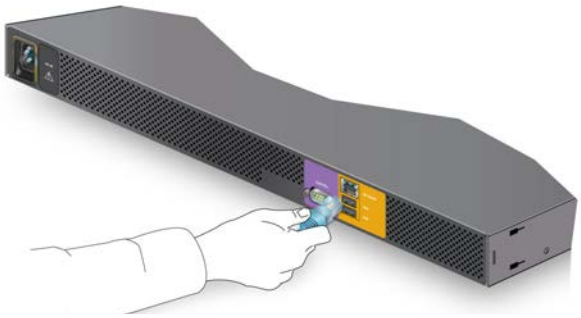
Connect servers before connecting other components.

The two lights above the network connection indicate activity and the type of connection.

Servers

1. Connect the Ethernet cable to the port labeled **NETWORK** on the back of the server.

   The **left** light indicates activity and is orange when a link is established. The **right** light blinks green for activity on a 1U Server and blinks amber on a 3U Server.

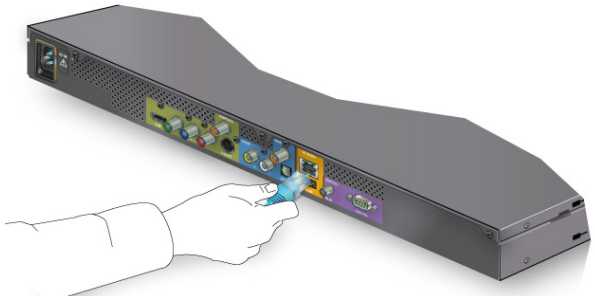


2. Plug the other end of the server Ethernet cable into a **1000Base-T Ethernet switch** port.

   The server has an RS-232 serial port labeled **CONTROL** reserved for control systems. For more information, see Control Systems on page 98.

M500 Player

1. Connect the Ethernet cable to the port labeled **NETWORK** on the back of the player.



2. Plug the other end of the Ethernet cable into an Ethernet switch. A Gigabit switch is strongly recommended, and required if more than one player is used to watch Blu-ray movies at the same time.

   The **left** light indicates connection speed. When a 1000Base-T link is established, this light is amber. When a 100Base-TX link, this light is green. The **right** light blinks green when there is Ethernet activity. The activity light on the M500 player also indicates that network **RESET** has been pressed.

3. Connect appropriate A/V cables. Refer to Table 3-2 for cable restrictions.
4. Connect control cables for the controller being used. The player can connect to three types of controllers.
   - Serial controller (RS-232)
   - Ethernet (TCP/IP)
   - IR controller

a. Connecting to a serial controller

The M500 player acts as standard Data Terminal Equipment (DTE) with an RS-232 serial controller, connected via a female–female DB-9 serial cable.

Use the pinout shown in Figure 3-9 to wire the DB-9 female connector.

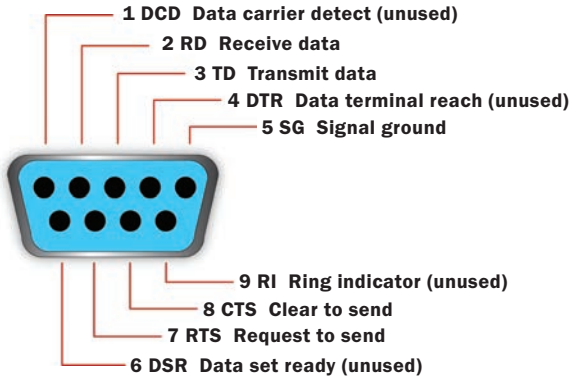

1 DCD Data carrier detect (unused)
2 RD Receive data
3 TD Transmit data
4 DTR Data terminal reach (unused)
5 SG Signal ground
9 RI Ring indicator (unused)
8 CTS Clear to send
7 RTS Request to send
6 DSR Data set ready (unused)

Figure 3-9 Serial Control Port Pinout (Male DB-9)

For complete instructions for serial control, refer to the *Kaleidescape System Control Protocol Reference Manual* at www.kaleidescape.com/go/control-protocol.

b. Connecting to the Ethernet

No additional cabling is required for Ethernet (TCP/IP) controllers if the controller is part of the network.

c. Connecting to an IR controller

The IR receiver on the front of the player is paired with an IR emitter wired directly to the **IR-IN** port on the back panel of the player.

Use the **IR-IN** port to connect the player to a remote IR receiver, an RF gateway, or a control system that sends IR commands.

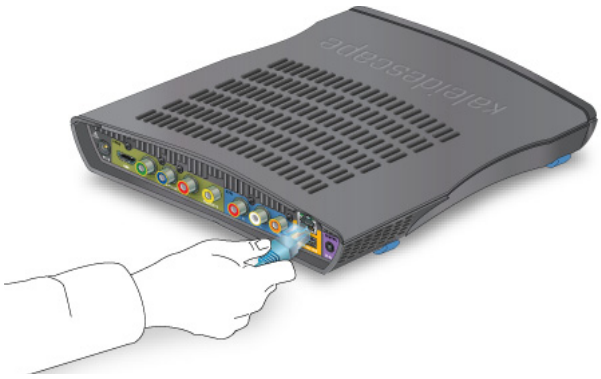
- Cut the emitter off any existing IR repeater or control system.
- Solder a cable with an 1/8 in. (3.5 mm) tip-sleeve (mono) connector to the leads that were connected to the emitter.
- Connect the signal to the tip of the connector and the ground to the sleeve.

When this cable is connected to the player **IR-IN** port, the player receives the same IR commands that would have been sent by the emitter.

M300 Player

1. Plug an Ethernet cable into the port labeled **NETWORK** on the back of the player.
2. Plug the other end of the Ethernet cable into an Ethernet switch. A Gigabit switch is strongly recommended, and required if more than one player is used to watch Blu-ray movies at the same time.

   The **left** light indicates connection speed. When a 1000Base-T link is established, this light is amber. When a 100Base-TX link, this light is green. The **right** light blinks green when there is Ethernet activity.

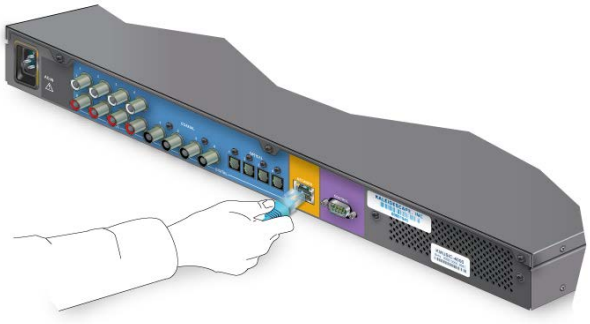


3. Connect appropriate A/V cables. Refer to Table 3-2 for cable restrictions.
4. Connect IR controller cable if required. See M500 IR cabling instructions above. No additional cabling is required for Ethernet (TCP/IP) controllers if the controller is part of the network.

Music Player

1. Plug an Ethernet cable into the port labeled **NETWORK** on the back of the player.

   The **left** light indicates activity and lights orange. The **right** light blinks amber when there is Ethernet activity.



2. Plug the other end of the Ethernet cable into an Ethernet switch.

3. Connect appropriate A/V cables. Refer to Table 3-2 for cable restrictions.
4. Connect control cables. The Music Player can connect to two types of controllers.
   - Serial controller
   - Ethernet IP

   To connect serial controller cable. see M500 Player IR cabling instructions above. No additional cabling is required for Ethernet (TCP/IP) controllers if the controller is part of the network.

Mini System

1. Connect an Ethernet cable from the port labeled **NETWORK** on the back of the Mini System into an Ethernet switch.

   The **right** light is green when there is a 100Base-TX link and blinks when there is activity. The **right** light is orange when there is a 1000Base-T link and blinks when there is activity.
2. Connect A/V cables and control cables as required. The player can connect to three types of controllers. Refer to cabling instruction for the M500 Player on page 35.
   - Serial controller (RS-232)
   - Ethernet (TCP/IP)
   - IR controller

CAUTION

When picking up or moving the Mini System, grasp the bottom of the system with two hands. Do NOT lift by the plastic side panels.

Wireless and Powerline Networking

The Kaleidescape server must be connected to the Internet to receive software updates and updates from the Movie and Music Guides, and to notify Kaleidescape if service is required.

Although the reliability of a wired Internet connection is preferred, in some situations the most practical option is an Internet connection using one of the following technologies:

- Wireless LAN
- Powerline communication

Wireless networks use radio frequencies to communicate without wires. Powerline networks carry data over a conductor also used for electric power transmission.

Wireless and powerline connections work well for providing Internet access to the Kaleidescape server, for connecting control systems, and for accessing the browser interface from a computer. However, a **wired Ethernet network is required between the Kaleidescape components** because of the small tolerance for latency while streaming movies or music.

Wireless LANs

A wireless router (or router and Wireless Access Point (WAP)) can be connected to a DSL or cable modem to provide wireless Internet connectivity. To connect a Kaleidescape server to the Internet, connect a wireless bridge (sometimes called a “wireless game adapter”) to the network connection on the Kaleidescape server. Follow the instructions for the wireless bridge to establish a connection.

Using channels that are five channel numbers apart decreases the channel cross-talk and improves performance. In the United States, only channels 1 through 11 are available, which means that the only three wireless networks that do not overlap are channels 1, 6, and 11.

Powerline Communications

Powerline communication (PLC) uses electrical wiring to interconnect segments of an Ethernet network. There are several proprietary PLC standards, including HomePlug, HD-PLC, and UPA. All equipment used in a setup must have the same standards.

To connect the Kaleidescape server to the Internet using a powerline network, plug a powerline adapter into an electrical outlet, and then to a router or switch with Internet access. Install a second powerline adapter near the Kaleidescape server, connect the adapter to the network connection on the Kaleidescape server and an electrical outlet.

Note: Because standards vary, Kaleidescape recommends using two powerline adapters of the same make and model.

Configuration Examples

Any Kaleidescape server can be connected to the Internet with wireless or powerline networking equipment. Depending on installation requirements, many configurations are possible if the connection between player and server always uses Ethernet cabling.

Figure 3-10 is a sample configuration for the Mini System. A wireless access point (WAP) or powerline adapter is connected to a router. The router is connected to the Internet access device (such as a cable or DSL modem). A

wireless bridge or powerline adapter is connected to the Mini System. Note that a wireless router performs the functions of both a router and a WAP.

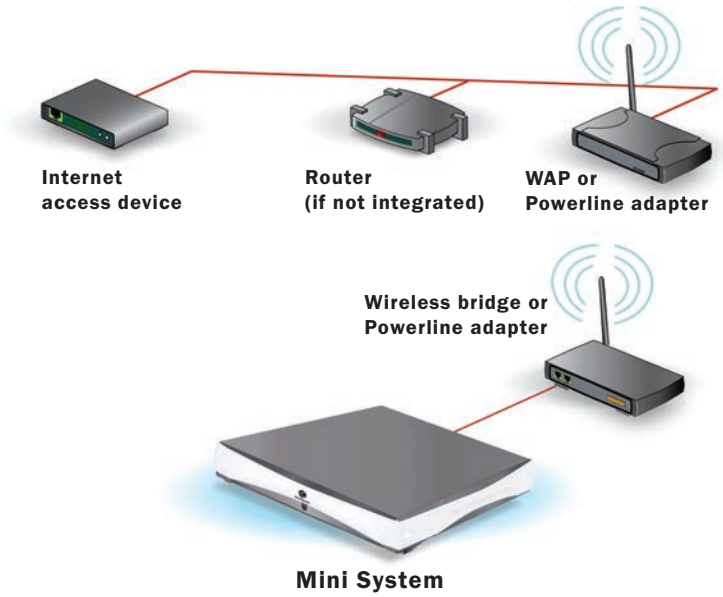


Figure 3-10 Kaleidescape Mini System with Wireless or Powerline Networking Equipment

Figure 3-11 is a sample wireless configuration for a Mini System and an M300 Player. Both the Mini System and the M300 Player are connected to an Ethernet switch, which is connected to the Internet using either wireless or powerline networking equipment.

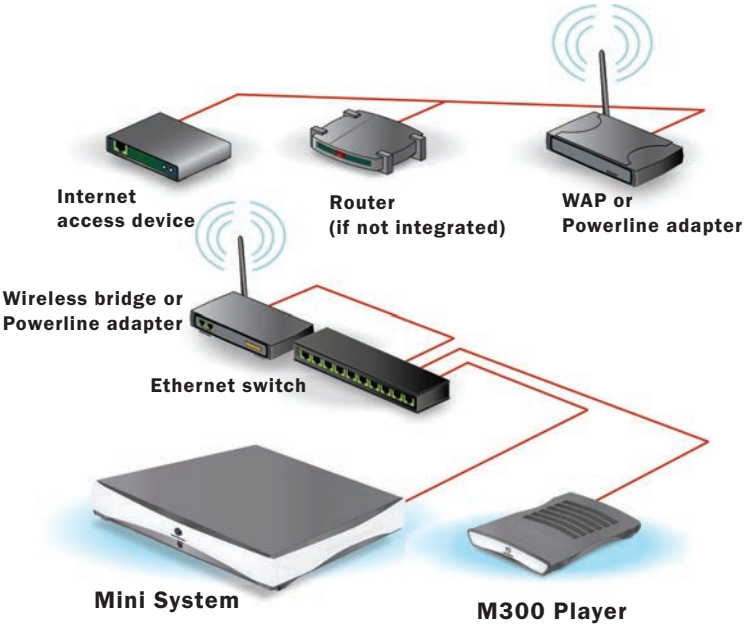


Figure 3-11 Mini System and M300 Player with Wireless or Powerline Networking Equipment

Figure 3-12 is a sample configuration for a 3U Server with an M500 Player and an M300 Player connected to an Ethernet switch. The switch is connected to the Internet using either wireless or powerline networking equipment.

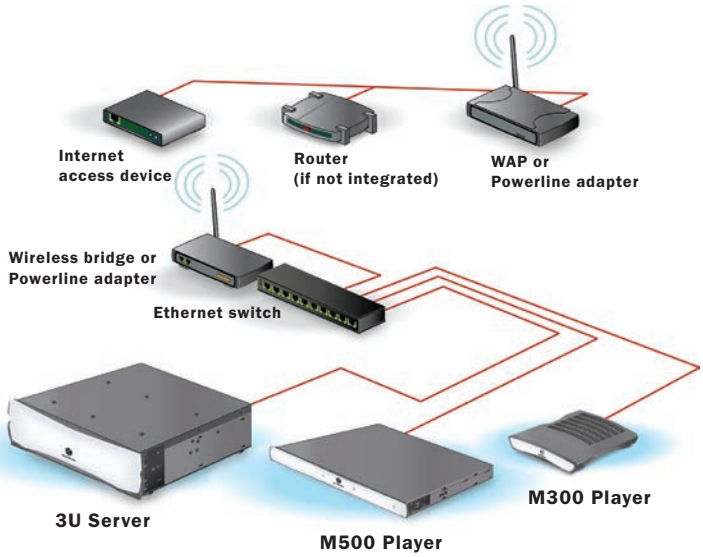


Figure 3-12 3U Server, M500 Player and M300 Player with Wireless or Powerline Networking Equipment

For more information about using wireless connections for Kaleidescape Systems, go to www.kaleidescape.com/go/wireless.

Connecting Components to Power Supply and Powering On

Use the following procedure to connect components to a power source and power on.

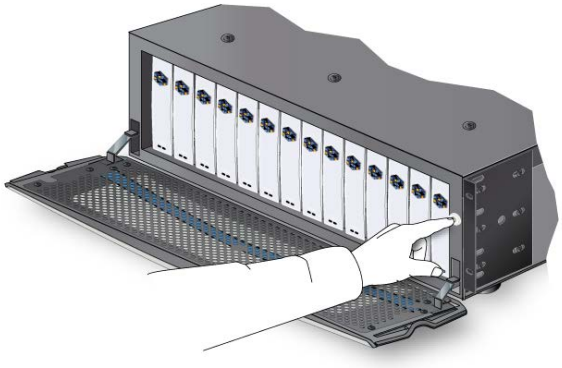
Servers

1. Plug the power cord into the socket labeled **AC-IN** on the back of the server. Plug the other end into a grounded outlet with a high-quality surge protector for the server power source. A UPS is optional.
2. **3U Server** — Open the front panel of the server and press the **POWER** button.

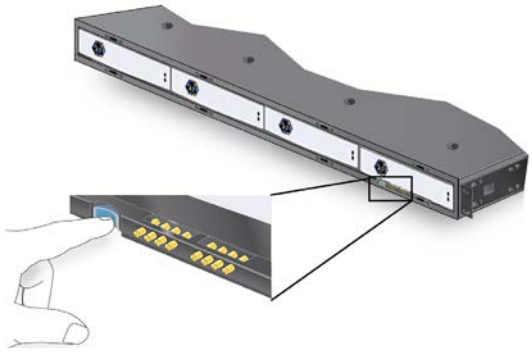
   1U Server — Press the **POWER** button on the right side of the front panel or remove the front panel and press the blue **POWER** button.

   The blue lights on the disk cartridges illuminate sequentially and then turn off briefly before turning on again and remaining on.

   The blue light on the 3U Server hot spare disk cartridge blinks.



3U Server with front panel down



1U Server with front panel off

3. Check that all lights are blue before closing the front panel.

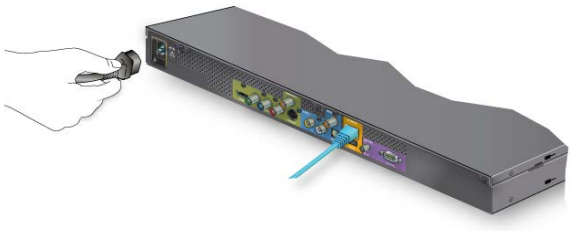
> **CAUTION**
>
> **Do NOT operate the server with empty slots. Empty slots compromise the cooling system. Fill any empty slots with blank disk cartridges.**

4. Leave the server connected to the Internet for at least one hour.
5. After waiting an hour, power off the server, then restart. This power off/on sequence installs the most recent software and activates licensing.

   The server can be powered on/off by pressing the **POWER** button, or can be rebooted remotely from the browser interface. See Configuring System Components on page 67.

M500 Player

1. Plug the power cord into the socket labeled **AC-IN** on the back of the player. Plug the other end of the cable into a grounded outlet with a high-quality surge protector.



2. Press the **POWER** button on the front of the player. The front panel glows blue.

M300 Player

1. Plug the DC power cord from the power supply into the socket labeled **DC-IN** on the back of the player.

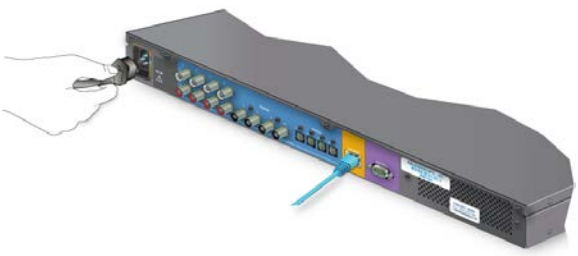
2. Plug the AC power cord into the power supply.
3. Plug the other end of the AC power cord to a grounded outlet with a high-quality surge protector.

   The M300 Player does not have a power button. The front panel glows blue when the player is connected to a power source.

   If the front panel does not glow blue, the player might be receiving power but set to standby mode. Use the **ON** button of a remote control to exit standby mode and turn on the player.

Music Player

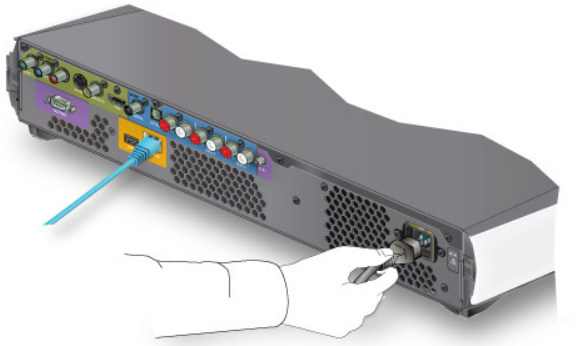
1. Plug the power cord into the socket labeled **AC-IN** on the back of the player. Plug the other end of the cable into a grounded outlet with a high-quality surge protector.



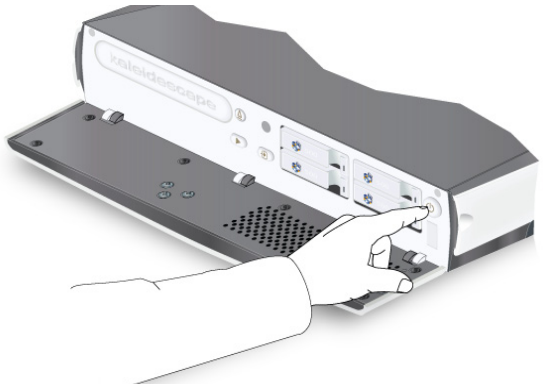
2. Press the **POWER** button on the front of the player. The front panel glows blue.

Mini System

1. Plug the power cord into the socket labeled **AC-IN** on the back of the Mini System. Plug the other end of the cable into a grounded outlet with a high-quality surge protector.



2. To power on with the power button, pull down the front panel and press the **POWER** button located to the right of the disk cartridges. Wait 30 seconds for the system to power on and disk cartridge status lights to go on.



After initial power on, pushing the **POWER** button toggles the Mini System in and out of standby mode. (Standby mode leaves the **POWER** button pulsing and the other button lights off. Disk cartridge status lights remain on.)

Power can be applied three ways.

- Using the Kaleidescape Mini System remote control
- By the power button located under the front panel
- Via the control protocol (RS-232 serial or TCP/IP commands (ENTER_STANDBY, LEAVE_STANDBY))

Standby mode allows other components in the system to access the content on the Mini System and music zones 2 and 3 remain operational. However, while in standby, zone 1 cannot be used for movies or music.

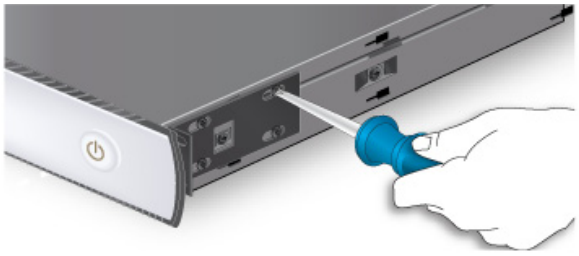
To power off the Mini System, press and hold the **POWER** button for 10 seconds. The disk cartridge lights turn off.

Note: In case of power failure, when power is reinstated, the Mini System returns to the same state as when the power failure occurred.

Tabletop Installation for the M500 Player

The M500 Player is packaged with rack ears. Tabletop installation involves removing the rack ears and installing side panels.

1. Remove the four screws that fasten each of the rack ears to the player. Use a #2 Phillips screwdriver.



2. Identify the left side panel (as viewed from the front of the player). The number 502-1005 can be found in the middle of the inside of the left side panel.
3. Position the side panel tab to back, finger guide to front.

4. Align the six plastic tabs on the panel with the six slots on the left side of the player.

5. Press the side panel tabs into the slots.
6. Slide panel forward until the panel locks into place and is flush with the back of the player.
7. Repeat for right side panel, number 502-1003.

Note: Panels are purely cosmetic. If space is a consideration, panels can be left off.

Wall Mounting the M300 Player

The M300 Player ships with a bracket for mounting the player to a vertical surface and a bracket for mounting the power supply.

The M300 Player can be mounted two ways.

- Permanently to a wall with bracket screwed to the player
- Without a screw in the bracket so the player can be easily removed

Note: Mounting the M300 Player vertically can interfere with receiving IR commands by the IR receiver on the front of the player (just below the front panel). The **IR-IN** port on the back of the player can be used to connect the player to a remote IR receiver, an RF gateway, or a control system. See Connecting Components to the Network on page 34.

Site Preparation

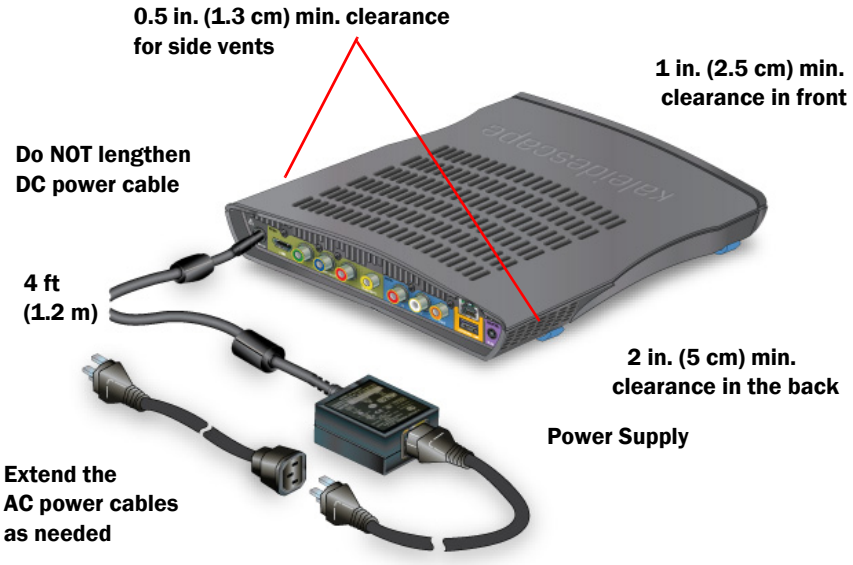
Use the following procedure to prepare the mounting site.

1. Plan the location. Consider orientation, cable lengths, and ventilation as well as local building and electrical codes.

   The M300 Player can be mounted with connectors up or down. The shape of the bracket fits the shape of the player.

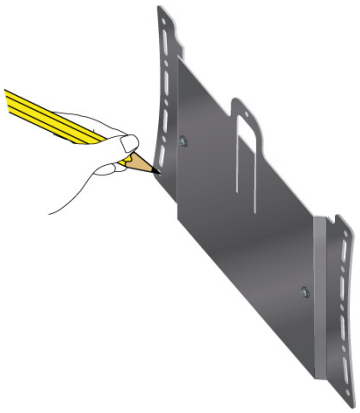
2. Find a mounting spot that allows for cable length limitations. Make allowances for strain relief.
3. Determine if the power supply must be mounted with the player to keep the player within the DC cable length limitation [4 feet (1.2 meters)].

Note: Do NOT lengthen the DC cable of the power supply.


0.5 in. (1.3 cm) min. clearance for side vents
1 in. (2.5 cm) min. clearance in front
Do NOT lengthen DC power cable
4 ft (1.2 m)
2 in. (5 cm) min. clearance in the back
Power Supply
Extend the AC power cables as needed

4. Verify that there is adequate airflow around the player (1 in. (2.5 cm) in front and 2 in. (5 cm) in back, minimum).

5. Prepare mounting holes. Place the bracket or bracket template against the wall and mark the locations of the four holes.



Invert bracket for mounting orientation with connectors up

6. Drill holes for fasteners. If the surface is wood or a similar material, drill a 3/32 in. (2 mm) pilot hole at each location.
7. Check that the mounting screws are the appropriate length. Do not use the screw anchors for wood.
   a. If mounting on drywall (hollow wall) or masonry (solid wall), drill a 3/16 in. (5 mm) hole for the screw anchors. Insert the anchors and tap with a hammer until anchors are flush with the surface.
   b. If mounting the power supply with the player, repeat steps for the power supply bracket.
8. The player serial number is not visible after the player is mounted. Attach the extra serial number label (included in the packing box) to an area where the number can be read.

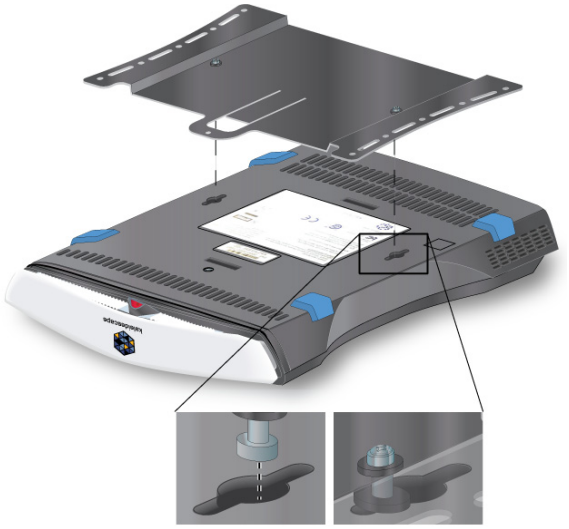
Permanent Mounting

Use the following procedure to mount the M300 Player permanently.

1. Use a #1 Phillips screwdriver to remove the screw located on the bottom of the player.

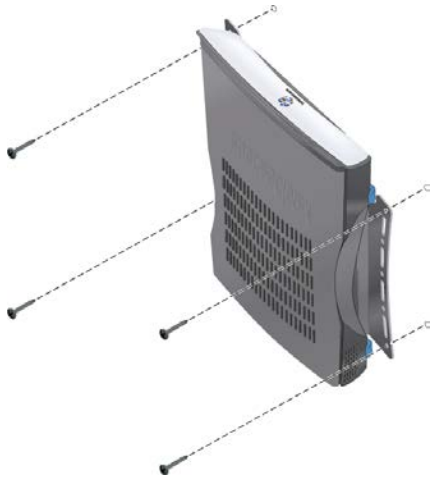
2. Align mounting slots on the bottom of the player to bracket pegs.

3. Slide the bracket down until the player clicks into place.



4. Fasten the bracket to the player with the retaining screw provided. Do NOT use the screw that was removed, that screw is too short.

5. Place the player and bracket over mounting holes.
6. Check that the mounting screws are the appropriate length. Do not use the screw anchors for wood.
7. Use a #2 Phillips screwdriver to fasten bracket with the mounting screws until the player and bracket are secure.



a. If mounting to drywall (hollow wall), or masonry (solid wall), drill a 3/16 in. (5 mm) hole for the screw anchors. Insert the anchors and tap with a hammer until anchors are flush with the surface.

b. Tighten each screw with additional turns to expand the anchor inside the wall. See Table 3-3.

c. If mounting the power supply with the player, repeat steps for the power supply bracket.

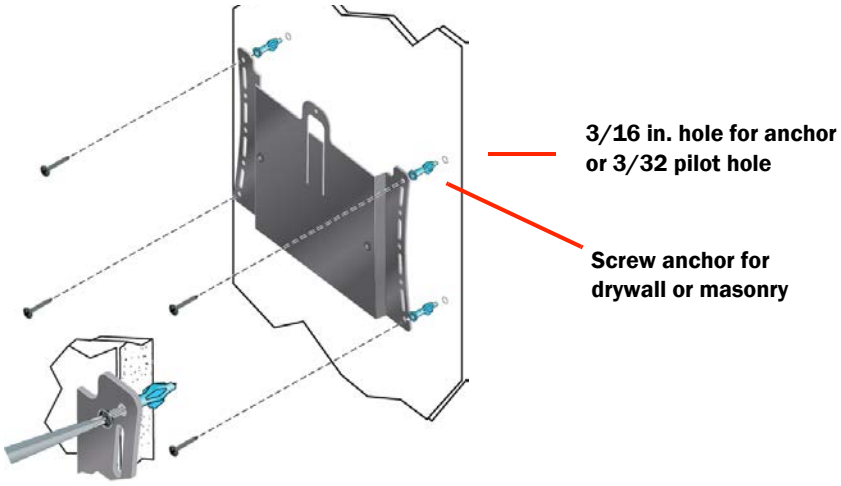
Table 3-3 Drywall Mounting

Drywall Thickness	Number of Turns Required
3/8 inch	7 to 9 turns
1/2 inch	5 to 7 turns
5/8 inch	3 to 4 turns
3/4 inch	1 to 2 turns

Removable Player Mounting

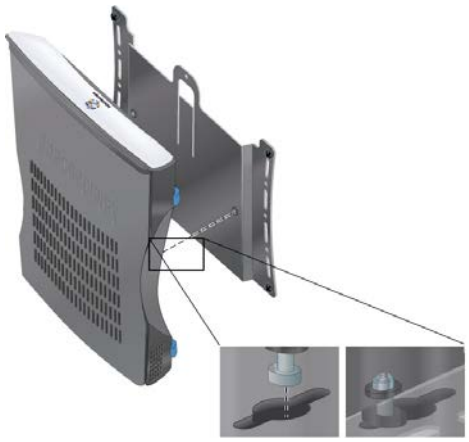
Use the following procedure to mount the M300 Player so that the player can be easily removed and replaced.

1. Place the bracket over mounting holes.
2. Use a #2 Phillips screwdriver to fasten with mounting screws until the bracket is secure.



If mounting to drywall (hollow wall), or masonry (solid wall), drill a 3/16 in. (5 mm) hole for the screw anchors. Insert the anchors and tap with a hammer until anchors are flush with the surface. Tighten each screw additional turns, refer to Table 3-3 on page 50.

3. Align the player mounting slots to the bracket pegs and slide the player down until the player clicks into place.



Power Supply Mounting

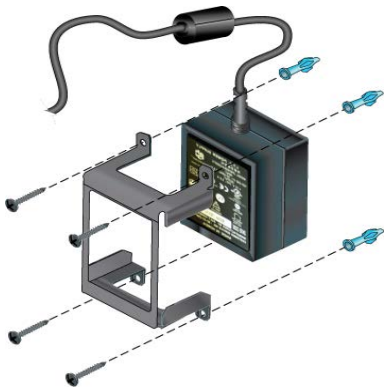
Use the following procedure to mount the M300 Player power supply.

1. Follow the steps in Site Preparation on page 46 using the power supply bracket as a template.
2. Place the power supply inside the bracket with the label facing away from the wall.

WARNING

To avoid electrical hazard and protect the player, use the power supply provided with the M300 Player.

3. Place the bracket and power supply over the holes and mount using a #2 Phillips screwdriver to fasten with mounting screws until the bracket is secure.



If mounting to drywall (hollow wall) or masonry (solid wall), drill a 3/16 in. (5 mm) hole for the screw anchors. Insert the anchors and tap with a hammer until anchors are flush with the surface. Tighten each screw additional turns, refer to Table 3-3 on page 50.

Disk Cartridges

Kaleidescape servers use three types of disk cartridges depending on the server. See Figure 3-13.

- 1U and 3U Server disk cartridges
- Mini Disk Cartridges
- 5U Server disk cartridges

1U and 3U Server disk cartridge

5U Server disk cartridge

Mini Disk Cartridge

Figure 3-13 Kaleidescape Disk Cartridges

WARNING

Disk cartridges are sensitive mechanical devices susceptible to damage from shock. Handle carefully. Protect from bumps and drops.

Always transport and ship disk cartridges in anti-static, well-cushioned containers.

Handling Disk Cartridges

Kaleidescape servers house disk cartridges that contain high-capacity hard drives to store movies and music. Disk cartridges are shipped with the server. Disk cartridges are pre-installed or packed in the shipping box depending on the server.

Handling disk cartridges correctly is critical to prevent damage.

Shock and Vibration

Disk cartridges are sensitive mechanical devices susceptible to damage from shock. **Do NOT shake or rattle disk cartridges.**

Damage to a disk cartridge is often difficult to detect and can cause sudden drive failure. Protect disk cartridges from bumps and drops and always transport or ship them in well-cushioned containers.

Note: Shipping containers designed to protect disk cartridges are available from Kaleidescape.

Electrostatic Discharge

Avoid touching the exposed connector at the back of a disk cartridge. Static electricity can damage the electronics inside the disk cartridge. Always store and ship disk cartridges in an anti-static bag.

Hard Drive Handling Video

A short video produced by Seagate demonstrates the correct way to handle disk drives and avoid catastrophic damage. To view this video, go to www.kaleidescape.com/go/drive-handling.

Server Fault Tolerance

RAID-K Data Protection

Every Kaleidescape server includes RAID-K technology for content protection. RAID-K is a proprietary technology developed by Kaleidescape to provide the following features:

- Better performance for movies and music
- Increased safety for content storage
- Content protection from a single drive failure
- Incremental additions to storage capacity

Unlike other variations of RAID technology, RAID-K allows new drives with different storage capacities to be added to the array.

If a drive fails, RAID-K data and parity information allow the server to continue providing content from the failed drive until a replacement disk cartridge can be installed.

Note: A failed disk cartridge must be replaced as soon as possible. If a second drive failure occurs on a 1U Server, 5U Server or Mini System before the first failed disk cartridge is replaced, content will be lost.

RAID-K technology does NOT allow swapping disk cartridges between servers.

Note: When a disk cartridge with a storage capacity larger than the other disk cartridges is added to servers other than the 3U Server, the larger capacity disk cartridge allots to storage the same amount of capacity as the largest disk already in the server. Any excess capacity is allotted to parity information. However, when a second large capacity disk cartridge is added, the entire storage capacity can be used to store movies and music.

Note: When a disk cartridge with a storage capacity larger than the other disk cartridges is added to a 3U Server, the first larger disk is used as hot spare, second is used for data and some parity, the third is all data.

3U Server Hot Spare Disk Cartridge

A hot spare disk cartridge is an additional disk cartridge installed in the **3U Server.** The hot spare is immediately available as a replacement if an existing drive fails. The Kaleidescape server continues to operate because of RAID-K technology and no content is lost. Information on the failed disk is recreated on the hot spare disk cartridge.

The hot spare disk cartridge can be identified by the slow blink on the blue light at the base of the disk cartridge. Active disk cartridges have steady blue lights.

When a failed disk cartridge is replaced, the replacement cartridge becomes the new hot spare disk cartridge.

Note: Because the hot spare must be able to replace any disk cartridge in the array, the capacity of the hot spare **cannot be smaller** than any other disk in the array.

(Servers other than the 3U Server do not have a hot spare disk cartridge and cannot begin failure recovery until a replacement cartridge is installed.)

Removing and Adding Disk Cartridges or Blanks

Server disk cartridge slots MUST be filled with disk cartridges or blanks. Disk cartridges can be added to expand server capacity or replaced as needed.

WARNING

Do not operate the server with empty slots. Always use blank cartridges to fill slots. Open slots compromise the cooling system.

When a Disk Cartridge Can Be Removed

If a server is powered on, the disk cartridge can be removed ONLY under the following conditions:

- Disk cartridge status light glows amber which indicates that the disk should be removed. A Transport Disk turns amber when the import is complete, but it has not failed.
- Disk cartridge status light is unlit indicating that the disk is not being recognized at all. (This could be just a seating problem.)

If more than one disk cartridge status indicator glows amber or is unlit on the same server, turn the server off immediately by pressing the **POWER** button, and contact Kaleidescape Support at +1 650-625-6160 or send a message to support@kaleidescape.com.

When a Disk Cartridge Does Not Glow Blue

Active disk cartridge status lights glow blue. If a disk cartridge status indicator light fails to glow blue when the server is powered on, it is usually for one of the following reasons:

- The disk cartridge is improperly installed.

  Power off the server, remove the disk cartridge, and reinsert. Be sure that the disk cartridge is firmly seated.

- The disk cartridge is defective.

Power off the server and remove the disk cartridge. Contact Kaleidescape Support for return information.

- The disk cartridge was previously installed in another server.

Removing and Adding Disk Cartridges in a 3U and 1U Server

Removing a Disk Cartridge from a 3U or 1U Server

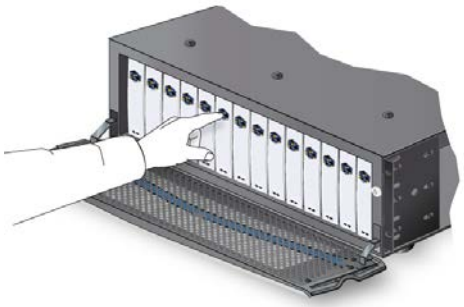
Use the following procedure to remove a disk cartridge or blank from a 3U or 1U Server.

1. Access the front panel of the server.

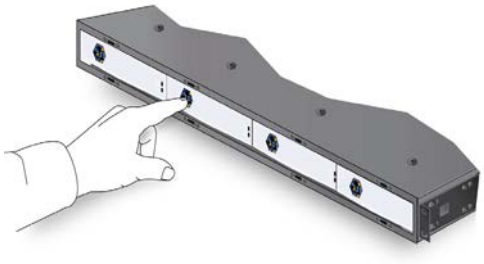
   3U Server – Pull down front panel.

   1U Server – Tug gently on both sides of the front panel and remove.

2. Press the **EJECT** button (Kaleidescape logo) on the disk cartridge. (Blank cartridges do not have the logo on the **EJECT** button).

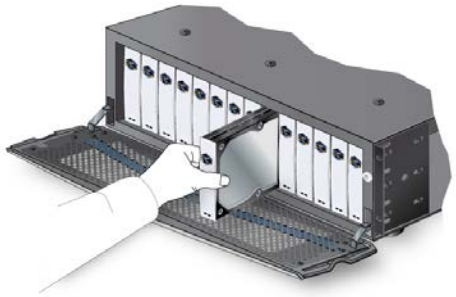


3U Server EJECT button

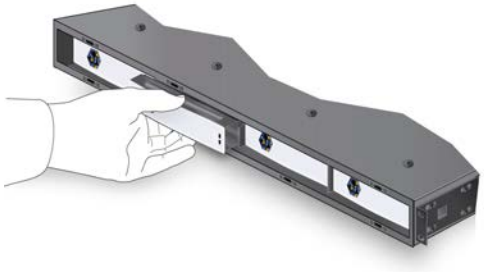


1U Server EJECT button

3. Gently glide the disk cartridge out of the slot.



Removing a disk cartridge from a 3U Server



Removing a disk cartridge from a 1U Server

4. Place the disk cartridge in a well-padded container for safe storage and transport.
5. Insert a new disk cartridge in the empty slot.
6. For the 3U Server, close the front panel. For the 1U Server, replace the front panel by aligning the six posts on the rear of the front panel with the slots in the chassis and pushing the panel until the panel snaps into place.

Adding a Disk Cartridge in a 3U or 1U Server

A disk cartridge can be added at any time to increase server storage capacity, whether the server is running or not.

Use the following procedure to add a disk cartridge to a 3U or 1U Server.

1. Access the front panel of the server.

   3U Server – Pull down the front panel.

   1U Server – Tug gently on both sides of the front panel and remove.

2. Verify that the latch on the disk cartridge, the gray plastic wedge that extends from the top of the disk cartridge, works properly. See Figure 3-14.

The latch is designed to retract when the Kaleidescape logo (or white button on a blank) is pressed, and to pop up and engage with the chassis when a disk cartridge is inserted. If the latch sticks in the retracted position the disk cartridge does not lock in place and cannot operate properly.

Note: If the latch sticks, follow the procedure to resolve the problem at www.kaleidescape.com/go/latch.

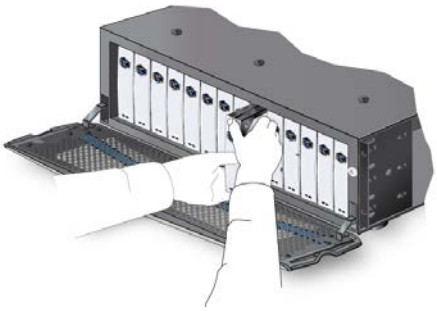
Figure 3-14 Disk Cartridge Latch

3. Align the disk cartridge to the slot.

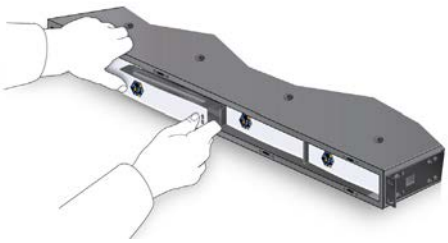
   3U Server – Latch goes to the top with lights at the bottom.

   1U Server – Latch goes to the left with lights to the right.

4. Insert the disk cartridge into the open slot. Push firmly but gently until the disk cartridge clicks into place. Do NOT slam the disk cartridge.



Adding a disk cartridge to a 3U Server



Adding a disk cartridge to a 1U Server

5. Verify that the disk cartridge status light glows blue.

Note: If replacing a single failed drive on a 3U Server, the newly installed disk cartridge becomes the new hot spare. The blue status light on the hot spare disk cartridge blinks at two second intervals.

6. For the 3U Server, close the front panel. For the 1U Server, replace the front panel by aligning the six posts on the rear of the front panel with the slots in the chassis and pushing the panel until the panel snaps into place.

Removing and Adding 5U Server Disk Cartridges

Removing a 5U Server Disk Cartridge

Use the following procedure to remove a disk cartridge or blank from a 5U Server.

1. Pull down the front panel.

2. Pull the latch on the disk cartridge down.

3. Slide the disk cartridge out carefully.
4. Insert a new disk cartridge into the empty slot.
5. Close the front panel.

Adding a 5U Sever Disk Cartridge

A Kaleidescape disk cartridge can be added at any time to increase server storage capacity, whether the server is running or not.

Use the following procedure to add a disk cartridge to a 5U Server.

1. Pull down the front panel.
2. Align the disk cartridge to the slot. The status light goes towards the top.
3. Pull the latch down on the disk cartridge.

4. With the latch down, slide the disk cartridge in as far as possible, just until the latch starts to close.
5. Close the latch completely and push on the label above the status light until the disk cartridge is firmly seated.

WARNING

If the latch is closed before inserting the disk cartridge, the disk cartridge cannot be seated properly and the drive can be damaged.

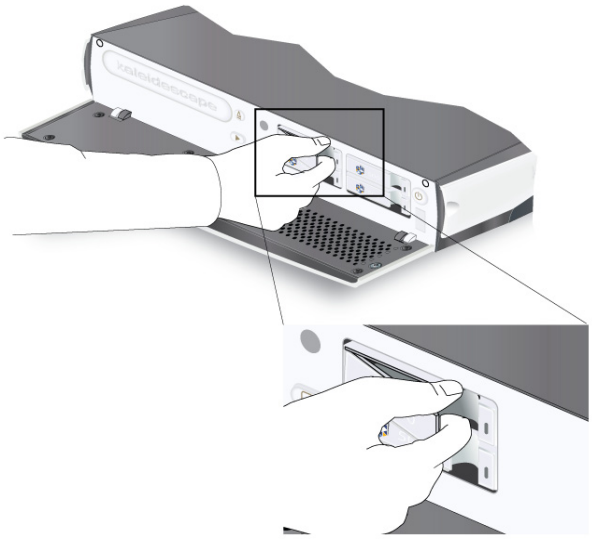
6. Verify that all disk cartridges are evenly aligned and status lights glow blue before closing the front panel.

Removing and Adding Mini Disk Cartridges

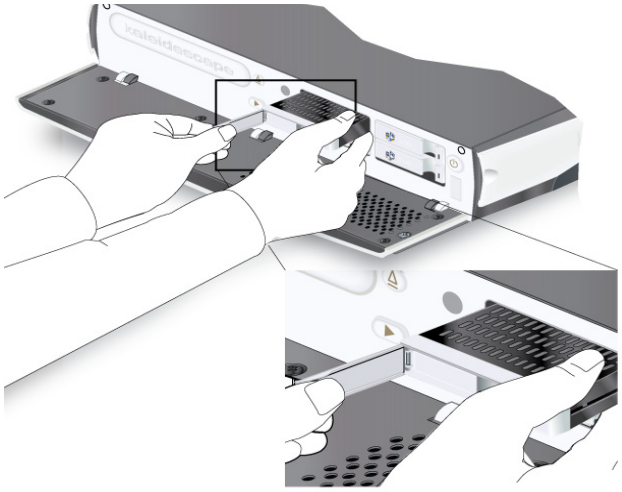
Removing a Mini Disk Cartridge

Use the following procedure to remove a disk cartridge or blank from a Mini System.

1. Pull down the front panel on the server.
2. Pull out the latch release on the disk cartridge.



3. Pull on the latch release and remove the disk cartridge.



4. Insert a new disk cartridge in the empty slot.

Close the front panel.

Adding a Mini Disk Cartridge

Kaleidescape disk cartridges can be added at any time to increase server storage capacity, whether the server is running or not.

Use the following procedure to add a disk cartridge to a Mini System.

1. Pull down the front panel.
2. Align the disk cartridge to the slot. The status light must be on the right with the latch release handle closed.
3. Guide the cartridge all the way into the slot. A click sounds when the latch is engaged. See Figure 3-15.

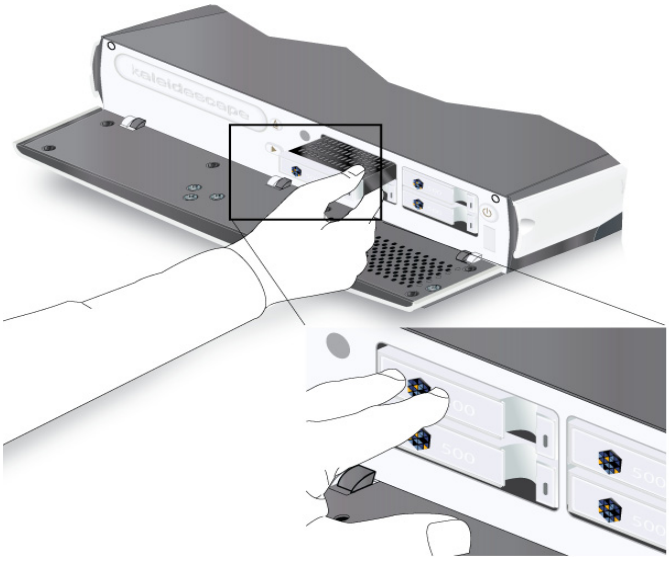


Figure 3-15 Mini Disk Cartridge Latch Release

4. Push on the disk cartridge to be sure the disk cartridge is completely seated.
5. Verify that the disk cartridge status light glows blue.
6. Close the front panel.

Section 4
System Configuration

Browser Interface

Kaleidescape Systems are configured through the browser interface with two main links: installer pages and user pages.

- **Installer pages** are primarily used for initial setup during installation and are used to set the following parameters:
  - Server status and system information
  - Network settings
  - Video and audio settings
  - Region codes
- **User pages** are used for user settings such as managing movie and music libraries, creating scripts, collections and mix albums, and setting parental control level.

Accessing the Browser Interface

There are three primary ways to access the installer pages: System URL, serial number URL, and server IP address.

- System URL

  http://my-kaleidescape/installer (Windows) or
  http://my-kaleidescape.local/installer (Mac)

- Serial number URL
  http://ks-[server_serial_number]/installer (Windows) or
  http://ks-[server_serial_number].local/installer (Mac)

  Replace [server_serial_number] with the 12-digit serial number of the server. For example, to access the browser interface of a server with the serial number **0000 0001 2345**, enter **http://ks-000000012345/installer**.

- IP address of the server
  http://[server_IP_address]/installer

User pages are accessed without the /installer in the URL.

Troubleshooting if the Browser Interface Does Not Load

If using a Windows operating system and the web browser cannot load the browser interface using one of the methods above. Refer to Network Requirements on page 156.

Viewing System Information

After the Kaleidescape server is installed, powered on, and has an active network link, use the following procedure to check server status and change settings for the installation site.

1. Open the installer pages of the browser interface.

   a. With a single Kaleidescape System on the network, open a web browser and enter http://my-kaleidescape/installer (Windows) or http://my-kaleidescape.local/installer (Mac).

Note: The System URL has the name **my-kaleidescape** but that name can be changed on the **PREFERENCES** tab. If the System URL has been changed, use the new address.

   b. If setting up separate (non-grouped) systems, each with a dedicated server on the same subnet, and System URLs have not been changed, use an address beginning with **ks-** followed by all twelve digits of the server serial number.

      Example:
      http://ks-00001000040b/installer (Windows) or
      http://ks-00001000040b.local/installer (Mac)

2. If a login page appears, enter the installer password if necessary and click **LOGIN**.

Note: This step is not necessary if no password was set.

   The installer **HOME** page appears, displaying basic system status information. See Figure 4-1. (If a different installer page appears, select the **HOME** tab.)

   The left side of the page lists all Kaleidescape components in the system.

3. Verify that the connection is to the correct server by checking the serial number listed.

   The **HOME** page also shows software version, number of movies and albums on the server, as well as storage capacity and usage.

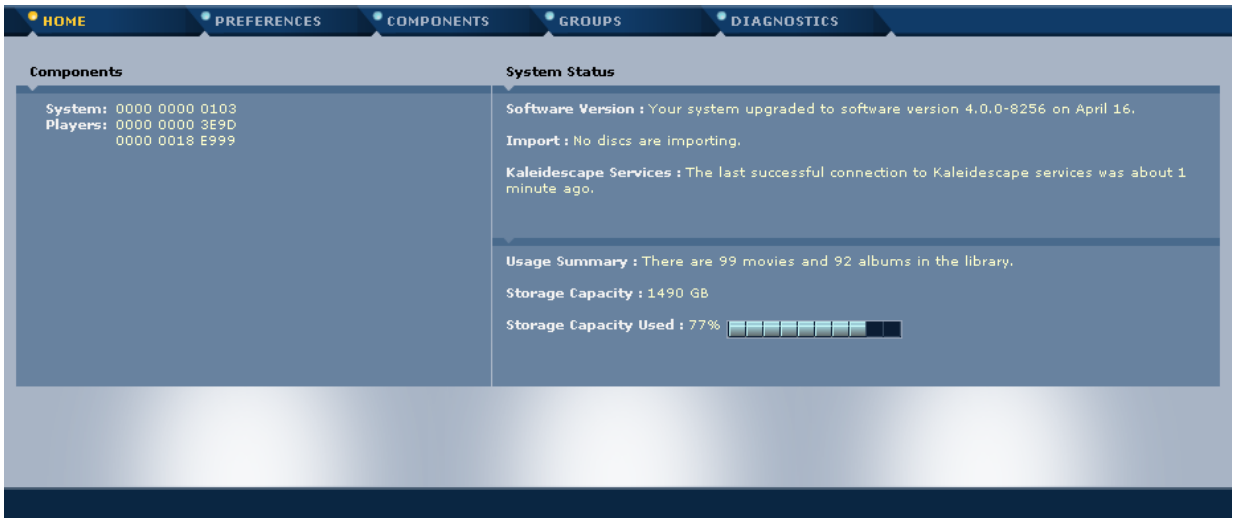

HOME
PREFERENCES
COMPONENTS
GROUPS
DIAGNOSTICS
Components
System: 0000 0000 0103
Players: 0000 0000 3E9D
0000 0018 E999
System Status
Software Version : Your system upgraded to software version 4.0.0-8256 on April 16.
Import : No discs are importing.
Kaleidescape Services : The last successful connection to Kaleidescape services was about 1 minute ago.
Usage Summary : There are 99 movies and 92 albums in the library.
Storage Capacity : 1490 GB
Storage Capacity Used : 77%

Figure 4-1 Installer HOME Page

If a component has a problem, an alert appears on every page of the browser interface. Figure 4-2 shows an example alert.

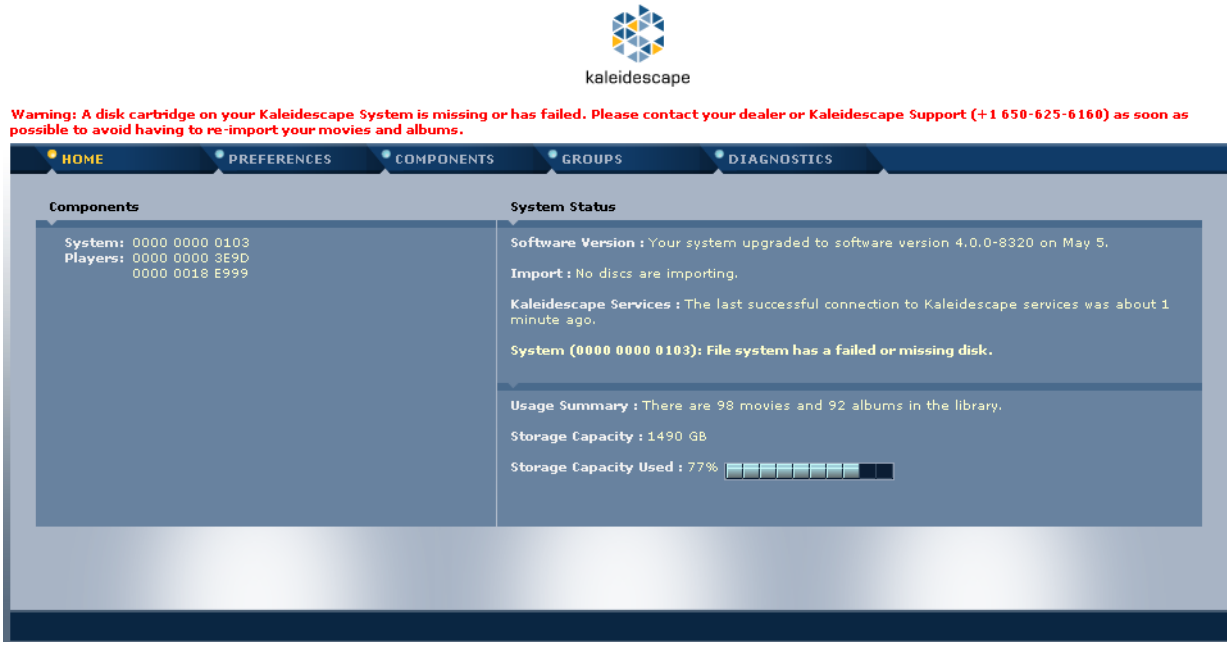

kaleidescape
Warning: A disk cartridge on your Kaleidescape System is missing or has failed. Please contact your dealer or Kaleidescape Support (+1 650-625-6160) as soon as possible to avoid having to re-import your movies and albums.
HOME
PREFERENCES
COMPONENTS
GROUPS
DIAGNOSTICS
Components
System: 0000 0000 0103
Players: 0000 0000 3E9D
0000 0018 E999
System Status
Software Version : Your system upgraded to software version 4.0.0-8320 on May 5.
Import : No discs are importing.
Kaleidescape Services : The last successful connection to Kaleidescape services was about 1 minute ago.
System (0000 0000 0103): File system has a failed or missing disk.
Usage Summary : There are 98 movies and 92 albums in the library.
Storage Capacity : 1490 GB
Storage Capacity Used : 77%

Figure 4-2 Example of a Browser Interface Alert

Setting System Preferences

Use the following procedure to set system preferences.

1. Open the installer pages of the browser interface.
2. Select the **PREFERENCES** tab. See Figure 4-3.

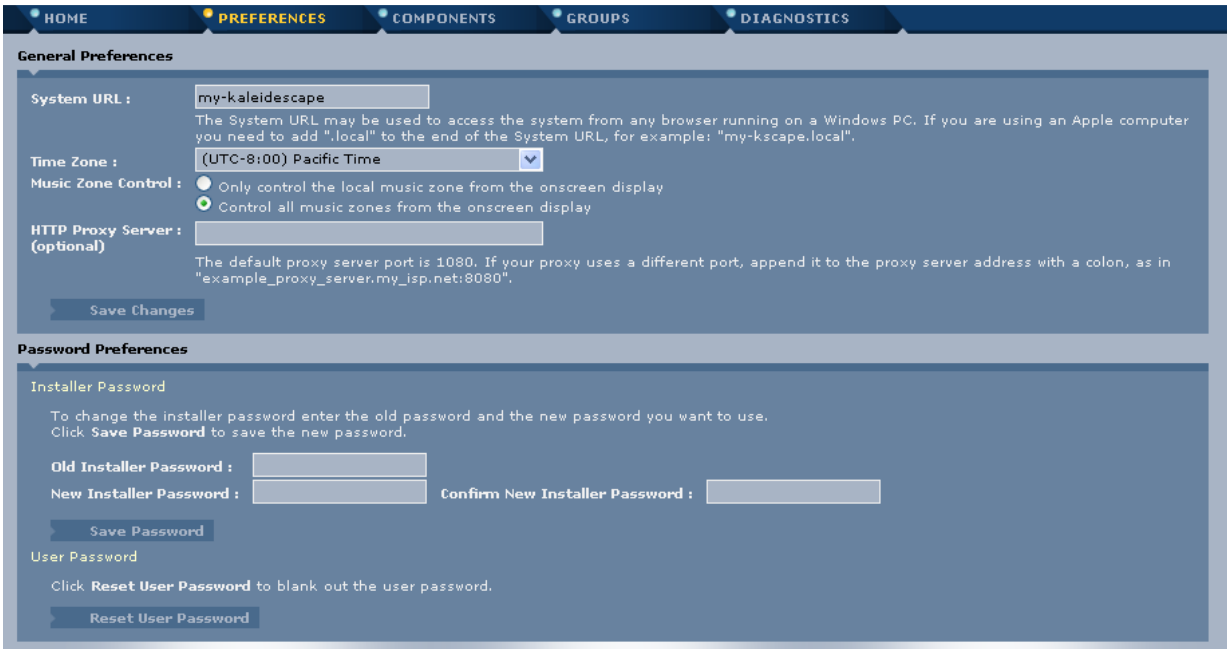

HOME
PREFERENCES
COMPONENTS
GROUPS
DIAGNOSTICS
General Preferences
System URL :
my-kaleidescape
The System URL may be used to access the system from any browser running on a Windows PC. If you are using an Apple computer you need to add ".local" to the end of the System URL, for example: "my-kscape.local".
Time Zone :
(UTC-8:00) Pacific Time
Music Zone Control :
Only control the local music zone from the onscreen display
Control all music zones from the onscreen display
HTTP Proxy Server : (optional)
The default proxy server port is 1080. If your proxy uses a different port, append it to the proxy server address with a colon, as in "example_proxy_server.my_isp.net:8080".
Save Changes
Password Preferences
Installer Password
To change the installer password enter the old password and the new password you want to use.
Click Save Password to save the new password.
Old Installer Password :
New Installer Password :
Confirm New Installer Password :
Save Password
User Password
Click Reset User Password to blank out the user password.
Reset User Password

Figure 4-3 Installer PREFERENCES Page

3. Change the **System URL** if setting up multiple (non-grouped) systems at the same site. This descriptive name provides direct access to a server.

   Enter a descriptive name in the **SYSTEM URL** field. Characters must be lower case with no spaces. Click **SAVE CHANGES**.

4. Set the **Time Zone**. Select from the drop-down menu and click **SAVE CHANGES**.

5. Set the **Music Zone Control**. This option allows control of only the local music zone from onscreen display, or control of all music zones in the system from any player. Select the appropriate radio button and click **SAVE CHANGES**.

6. Set the **HTTP Proxy Server** if necessary. Use this option if the network has to communicate to the Internet through a proxy server. Configure the proxy server by entering the appropriate proxy server information and click **SAVE CHANGES**.

7. Set or change the **Installer Password**. Enter the current password, if any, then enter and confirm the new password. Click **SAVE PASSWORD**.

Note: Setting an installer password is a precautionary procedure to prevent unauthorized modification of the system configuration, and can prevent children from overriding parental control settings.

Note: If an installer password is forgotten, contact Kaleidescape Support.

8. Click **RESET USER PASSWORD** to clear the user password if a customer forgets the password.

Configuring System Components

The **COMPONENTS** tab lists properties for system components. Use the following procedures to view and set video and audio format preferences, and network settings.

System Components

1. Open the installer pages of the browser interface and select the **COMPONENTS** tab.

   A list of the components in this system appears including detailed information about each component (serial number, IP address, MAC address, storage capacity, storage available, front panel lighting, and temperature). See Figure 4-4.

HOME
PREFERENCES
COMPONENTS
GROUPS
DIAGNOSTICS
System
Device Type : Mini System
Device Name : Elizabeth's Mini System
Control the onscreen display
Serial Number : 0000 0000 0103
IP Address : 192.168.16.26
MAC Address : 00:E0:F4:1B:F9:4C
Capacity : 1490 GB
Space Available : 346 GB (23%)
Front Panel Lights : 8 (default)
Import : Allow imports
Preferred Movie Format : 16:9 widescreen
Screen Saver Timeout : 5 minutes (default)
Zone 1 Name (for music) : Living Room
Control music on zone 1
Zone 2 Name (for music) : Patio
Control music on zone 2
Zone 3 Name (for music) : Den
Control music on zone 3
31
Temperature (°C) :
Help
OK
Settings
Restart
2 Players
Device Type : Movie Player 2
Device Name : Movie Player - 3E9D
Control the onscreen display
Serial Number : 0000 0000 3E9D
IP Address : 192.168.16.102
MAC Address : 00:0B:63:00:1E:9B
Front Panel Lights : 2 (default)
Import : Allow imports
When Import Finishes : Do not eject disc
Preferred Movie Format : 16:9 widescreen
Screen Saver Timeout : 5 minutes (default)
Zone 1 Name (for music) : Garage
Control music on zone 1
48
Temperature (°C) :
Help
OK
Settings
Restart
Device Type : M500 Player
Device Name : M500 Player
Control the onscreen display
Serial Number : 0000 0018 E999
IP Address : 192.168.16.100
MAC Address : 00:0B:63:00:75:D3
Front Panel Lights : 8 (default)
Import : Allow imports
When Import Finishes : Do not eject disc
Screen Saver Timeout : 5 minutes (default)
Zone 1 Name (for music) : Music Zone
Control music on zone 1
65
Temperature (°C) :
Help
OK
Settings
Restart

Figure 4-4 Installer COMPONENTS Page

2. Input meaningful **Device Names** for each player or Mini System, for example **Living Room** or **Guest Room**. Then click **OK.**

   The **Device Name** identifies the component throughout the user interface. For example, the **Device Name** appears as the name of the onscreen display control panel for the component movie zone and on the **PARENTAL CONTROL** tab in the user pages of the browser interface.

3. Click on the **Control the onscreen display** link to bring up the control panel for the player. This is the same onscreen display control panel used on the user pages and can be used for testing and troubleshooting system configurations.

4. Set the brightness of the **Front Panel Lights**. Use the drop-down menu to select brightness, then click **OK**.

5. Set **Import** privilege. Use the drop-down menu to allow or not allow imports from the tray on this device, then click **OK**.

   Any player (or Mini System) with a disc tray has the option to allow or disallow imports. This option prevents guests or children from accidentally importing content. With import disabled, movies and albums can still be played from the tray.

6. Select whether or not to open a disc tray automatically **When an Import Finishes**. Use the drop-down menu, then click **OK**.

Note: This option is useful if the component in question is behind a door that can prevent the tray from ejecting properly.

Note: Mini Systems do not eject the tray automatically when an import finishes because the disc tray is behind the front panel.

7. The **Preferred Movie Format** selects the format used when the user presses **PLAY**. If widescreen is selected, the fullscreen version can still be played by selecting **PLAY FULLSCREEN VERSION** in the onscreen display.

Note: M-Class players always use the 16:9 version.

8. Use the drop-down menu to select the a format, **4:3** for full screen viewing or **16:9** for widescreen display, then click **OK**.

   This option is applied when multiple versions of a DVD with different aspect ratios are stored on a Kaleidescape server. For example, the DVD *A Bug's Life* contains both widescreen and full screen versions on the same disc. The **Preferred Movie Format** indicates which is given preference when the user presses play.

   If widescreen is selected as the preference here, the fullscreen version can still be played by selecting **Play Fullscreen Version** in the onscreen display. This option gives preference to one version or the other when just pressing **Play**.

Note: M-Class players always give preference to the **16:9** version.

9. Select the **Screen Saver Timeout** period. This option selects how long the onscreen display stays on before showing the screen saver. Use the drop-down menu to select the timeout duration, then click **OK**.

   If selecting a screen saver timeout of more than 5 minutes (default), a warning message appears about display burn-in. See Figure 4-5. Be sure to consult the manufacturer's documentation.

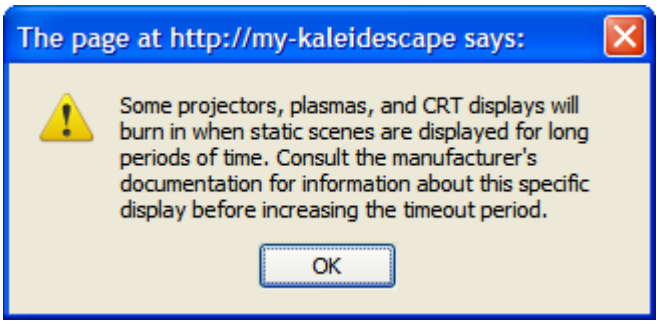

The page at http://my-kaleidescape says:
Some projectors, plasmas, and CRT displays will burn in when static scenes are displayed for long periods of time. Consult the manufacturer's documentation for information about this specific display before increasing the timeout period.
OK

Figure 4-5 Display Burn-in Warning Message

10. Name the **Music Zones**. Enter the names for the music zones in the text boxes and click **OK**. It is often useful to choose practical names such as living room, patio, or bedroom. The music zone name appears on the **HOME** tab of the user pages of the browser interface for the corresponding music zone control panel and throughout all user interfaces.

    The onscreen display lists the names of the music zones if the **control zone** feature is enabled, and control panels list the zones by name.

11. Click the **Control Music on Zone #** link to bring up the control panel for that music zone. This is the same music control panel used on the user pages to control music in areas without a display device and is useful for testing and troubleshooting system configurations.

12. Click **OK** after changing the information for a component.

Temperature Bar

A temperature bar shows the current operating temperature of each component. If a component is in, or approaching, the red section of the high temperature range, click the **Help** link. A window appears with instructions for corrective action. See Figure 4-6.

If a component is in, or approaching, the red low temperature range, the room temperature is likely too cold. Refer to the environmental specifications in Appendix A on page 124.

Kaleidescape Help
Component Temperature
There are three reasons why your Kaleidescape component may be too hot:
1. Dust buildup. Your component needs cleaning (Server and player cleaning procedures).
2. The installation does not allow proper airflow and ventilation (Airflow in equipment racks).
3. The environment is too hot.
Kaleidescape components are usually too cold only when the environment is too cold.
CLOSE

Figure 4-6 Component Temperature Help Window

Restart

The **RESTART** button is used to restart components remotely. It takes about two minutes to restart a server or Mini System. Any imports in progress are aborted.

Restarting the server prompts the server to check for software updates, and Movie Guide and Music Guide updates. A restart also clears alerts; however, if the condition still exists, the alerts reappear.

Components must be restarted for network changes to take effect.

Settings

The **SETTINGS** button is used to access specific configuration tabs.

- Servers have two settings tabs: **NETWORK** and **CONTROL**.
- Movie players and the Mini System have seven settings tabs: **VIDEO**, **AUDIO**, **LANGUAGE**, **NETWORK**, **CONTROL**, **REGION**, and **SCREEN MASKING**.
- Music Players have three tabs: **NETWORK**, **CONTROL**, and **REGION**.

Note: Older players without disc trays do not have **REGION** settings tabs.

There are variations for video, audio, and language settings depending on the component.

- M-Class players (M500 and M300 Players)
- Mini System and 1080p players (KSYSTEM-120, KPLAYER-6000, KPLAYER-300)
- Movie Player 2 and Movie Players (KPLAYER-2000, KPLAYER-2500, KPLAYER-5000)

Each component must be configured individually. Players have several video outputs which are all active simultaneously.

Use the **VIDEO** tab to optimize video for **each player** in the system.

If a player is connected to more than one display device (either using several video outputs from the player or a matrix switcher) video cannot be optimized for each display device. One set of settings must be chosen for the movie player that presents the fewest problems for all connected displays.

Video and Audio Settings

Video Settings for M-Class Players

Figure 4-7 shows video configuration settings for M-Class players. Each player can support 37 downstream HDCP devices.

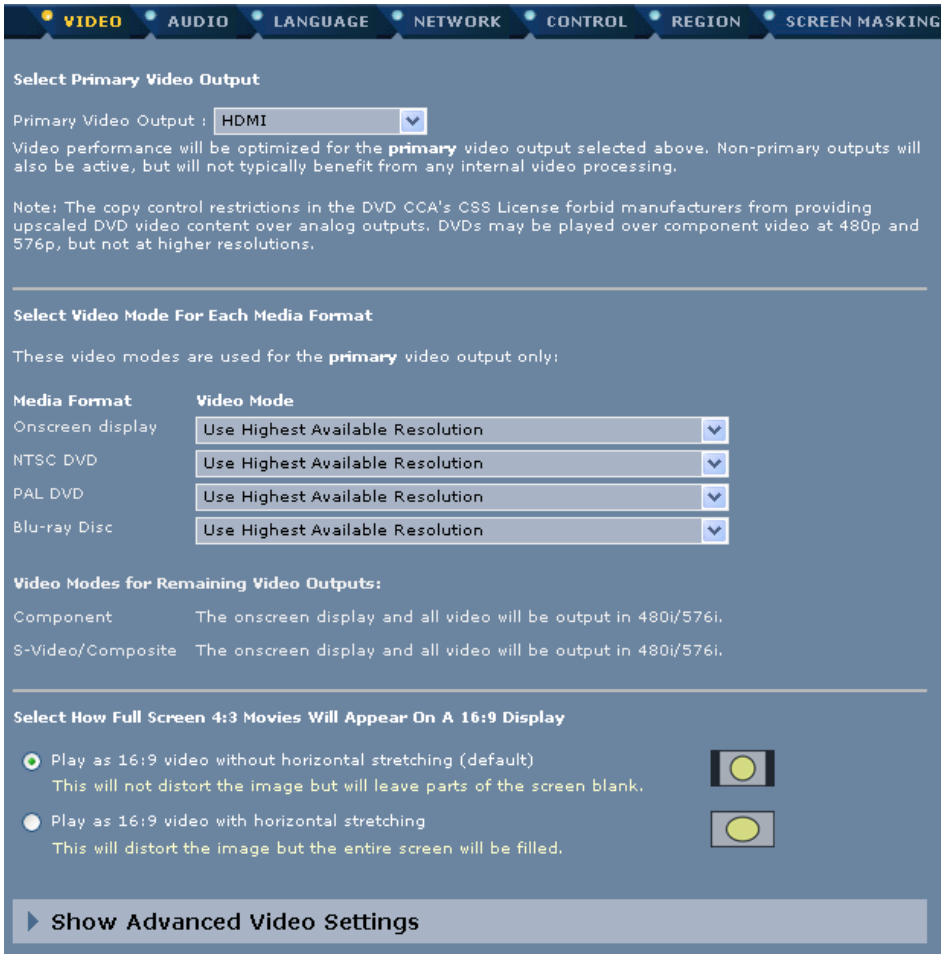

VIDEO
AUDIO
LANGUAGE
NETWORK
CONTROL
REGION
SCREEN MASKING
Select Primary Video Output
Primary Video Output : HDMI
Video performance will be optimized for the primary video output selected above. Non-primary outputs will also be active, but will not typically benefit from any internal video processing.
Note: The copy control restrictions in the DVD CCA's CSS License forbid manufacturers from providing upscaled DVD video content over analog outputs. DVDs may be played over component video at 480p and 576p, but not at higher resolutions.
Select Video Mode For Each Media Format
These video modes are used for the primary video output only:
Media Format
Video Mode
Onscreen display
Use Highest Available Resolution
NTSC DVD
Use Highest Available Resolution
PAL DVD
Use Highest Available Resolution
Blu-ray Disc
Use Highest Available Resolution
Video Modes for Remaining Video Outputs:
Component
The onscreen display and all video will be output in 480i/576i.
S-Video/Composite
The onscreen display and all video will be output in 480i/576i.
Select How Full Screen 4:3 Movies Will Appear On A 16:9 Display
Play as 16:9 video without horizontal stretching (default)
This will not distort the image but will leave parts of the screen blank.
Play as 16:9 video with horizontal stretching
This will distort the image but the entire screen will be filled.
Show Advanced Video Settings

Figure 4-7 Video Settings for the M500 and M300 Players

1. Select the **Primary Video Output** format from the drop-down menu. The primary output is typically the output that connects to the primary display device (the display most watched). Default setting is **HDMI**.
2. The player synchronizes audio and video for the primary video output, although all video outputs remain active. The video outputs cannot be controlled independently.
   - When HDMI is the primary video output, component video output is 480i/576i.
   - 1080p is available only over HDMI.
   - When component is the primary video output, HDMI has the same video mode as component.
   - 1080p24 output from DVD content is not supported. Only Blu-ray content is explicitly authored for playback at 24 frames per second.

CAUTION

Selecting the wrong primary video output or the wrong video modes can result in bad color, flickering, mismatched aspect ratio, or no picture at all

Consult display documentation if necessary.

---

3. Select **Video Mode** from the drop-down menus. Video mode choices for other video outputs are automatically set depending on the primary video output selected and its video modes. Copy control restrictions forbid outputting DVD content at resolutions higher than 480p or 576p over component video outputs.

   Do not choose any video mode that the display does NOT support. For example, if the display does not support PAL video modes, select **DO NOT PLAY** for PAL media formats. If a user tries to play a PAL formatted movie, a message appears stating that the display does not support PAL format.

   The video modes for other video outputs are displayed below the drop-down menus.
4. Configure **how full screen 4:3 movies will appear on a 16:9 display**. Select the radio button to determine how a movie appears on the screen.
   - **PLAY WITHOUT STRETCHING** (default) causes black bars to appear on the sides of a 4:3 image.
   - **PLAY WITH HORIZONTAL STRETCHING** causes the image to fill the display screen but will distort 4:3 images.

5. Click **OK** to save settings.
6. Select **Show Advanced Video Settings** for options related to performance and calibration. See Figure 4-8.

Hide Advanced Video Settings
Adjust Onscreen Display Picture Size
This adjustment can also be made in the System Setup view of the Kaleidescape menu in the onscreen display.
Large (default when the HDMI output is primary)
This setting uses more of the available space on your display for the onscreen display. Most displays connected via HDMI can use this setting.
Small
This setting leaves more space at the edges of the display. Use this setting if messages in the upper right corner are not completely visible when "Large" is selected.
Select Blacker-than-Black and Whiter-than-White Behavior
Video brightness (luma) can occasionally be below video black or above video white, especially for display calibration patterns.
Disable blacker-than-black and whiter-than-white (default)
Luma will range from video black to video white.
Enable blacker-than-black and whiter-than-white
This setting is intended only for use during calibration, as it will incur additional video mode changes and cause some disc menu and subtitle features to display incorrectly.
Select Detail Enhancement for HDMI Video
Detail enhancement will be most effective for upscaled video output over HDMI at 720p, 1080i or 1080p. If you select Low, Medium or Full below, you may wish to disable your display device's Sharpness control to achieve optimum picture quality.
Note: The recommendations below should be used as guidelines only; if you do not like the resulting video image, try more or less detail enhancement.
None
This setting is recommended if you are using an external video processor, or if your display device's Sharpness control is enabled.
Low (default)
This setting is recommended for use with most LCD and plasma displays or when viewers will be close to the display.
Medium
This setting is recommended for use with front projection screens in a home theatre, or when viewers will be far from the display.
Full
This setting provides maximum detail enhancement.
Select Deep Color for HDMI Video
Deep Color provides greater color precision to video when scaling or processing is applied. To take full advantage of this feature, all devices in the HDMI video path, such as switches, receivers and displays, must support Deep Color. Select Do not allow HDMI Deep Color if some devices in the HDMI video path are known to have no Deep Color support.
Do not allow HDMI Deep Color (default)
Allow HDMI Deep Color
OK
Cancel

Figure 4-8 Advanced Video Settings for M500 and M300 Players

a. Select the appropriate radio button for **Adjust onscreen display picture size** to control how messages are placed at the edges of the display.

   - **LARGE** is the default when HDMI is selected as the primary output.
   - **SMALL** is the default when HDMI is NOT the primary output. Use this setting if messages near the edge of the screen are cut off on the display with the large setting, for example, **Pause,** or **Play**.

Note: This adjustment can also be performed through the onscreen display **System Status** option.

b. Enable video brightness blacker-than-black and whiter-than-white to calibrate the display. Disable after calibration for viewing.

   M-Class players can output the full luma range, but it causes video mode changes between the onscreen user interface and movies, and causes some disc menus and subtitles to appear incorrectly.

c. Configure **Detail enhancement for HDMI Video** to influence how sharp the edges of scaled video appear. (Option is only available if HDMI is the primary video output.)

d. Enable **Deep Color for HDMI Video** only if all devices on the HDMI video path support deep color. (Option is only available if HDMI is the primary video output.)

e. Click **OK** to save settings.

Audio Settings for M-Class Players

M-Class players support Linear PCM (up to 7.1), Dolby Digital, Dolby TrueHD, DTS Digital Surround®, DTS-HD Master Audio™ and MPEG audio. However some codecs can only be output as bitstreams.

M-Class players can be used to watch DVD and Blu-ray movies with nearly any audio receiver or processor. To hear lossless audio tracks (for example, Dolby TrueHD or DTS-HD Master Audio) from Blu-ray Discs without alteration, the A/V receiver or audio processor must be able to decode these formats. When lossless audio is being played using **BITSTREAM PASS-THROUGH**, the coaxial, optical and analog audio outputs are silent.

Figure 4-9 shows audio settings for M-Class players.

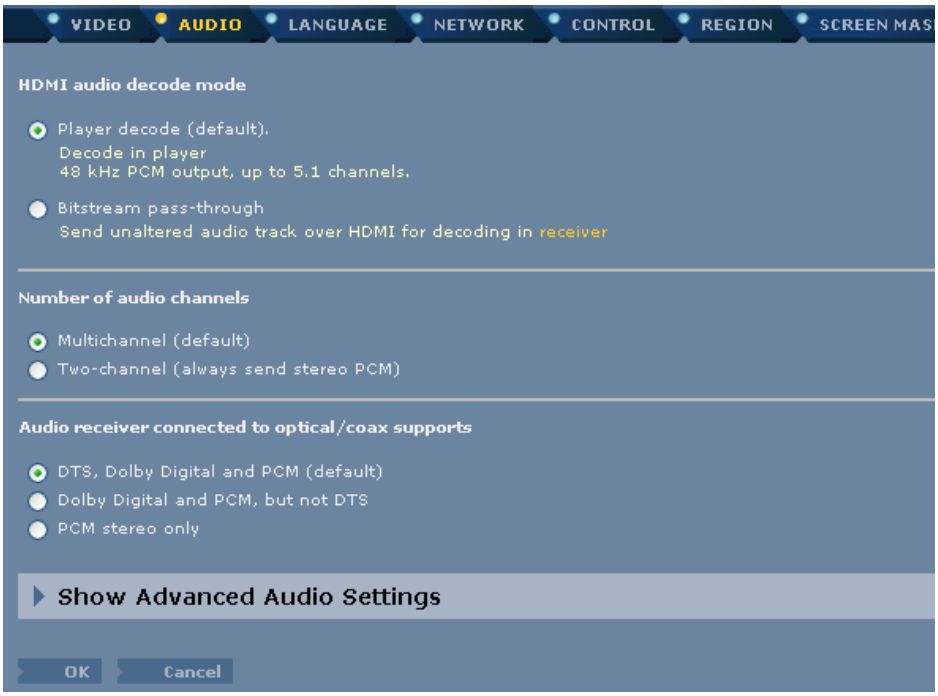


Figure 4-9 Audio Settings for M500 and M300 Players

Table 1 shows the output with default settings. These settings provide maximum compatibility.

Table 1 Outputs with the Player Decode (Default) Audio Setting

Audio Output Format	HDMI	Coax/Optical	Analog
CD	PCM stereo	PCM stereo	Stereo
DVD	PCM up to 5.1 channels	Source bitstream	Stereo
Blu-ray Disc	PCM up to 5.1 channels	DTS up to 5.1 channels or PCM Stereo	Stereo

1. Configure the **HDMI audio decode mode**.
   - **Player Decode Mode**
   - **Bitstream Pass-Through Mode**

   The audio decode mode affects all other audio settings. The decode mode determines if the player or the receiver decodes the audio.

   Audio can be sent as multichannel PCM over HDMI by default, with all outputs enabled, or it can be passed through to HDMI with other outputs disabled.

Player Decode Mode

Select **PLAYER DECODE** (default) to hear Blu-ray secondary audio or when coaxial, optical, or analog audio outputs are used. **PLAYER DECODE** sends 48 kHz PCM output over HDMI, up to 5.1 channels depending on content and cabling.

In **PLAYER DECODE** mode, optical/coaxial outputs carry DTS Digital Surround when the soundtrack has more than two channels. Audio can be output over optical/coaxial from any Blu-ray movie in this manner.

- **Secondary audio with picture-in-picture**

  Blu-ray Discs support a secondary audio track typically used for interactive audio and commentary. This track is mixed with the main audio so both tracks can be heard at the same time. M-Class players play secondary audio with picture-in-picture when in the **PLAYER DECODE** mode.

  (To hear unaltered primary audio, the players must be set to the **BITSTREAM PASS-THROUGH** setting.)

- **Downmixing**

  In **PLAYER DECODE** mode, M-Class players downmix DTS Digital Surround and Dolby Digital soundtracks to stereo audio output when playing Blu-ray Discs or DVDs.

Bitstream Pass-Through Mode

Select **BITSTREAM PASS-THROUGH** to send 7.1-channel Blu-ray soundtracks over HDMI at the highest bandwidth possible (up to 192 kHz or 7.1 channels) at the expense of other features.

The lossless audio formats available on Blu-ray Discs, such as Dolby TrueHD, DTS-HD Master Audio and 7.1-channel PCM, exceed the capabilities of analog and optical/coaxial audio outputs. These formats are only available over HDMI, and only when using the **BITSTREAM PASS-THROUGH** mode. This setting turns off the analog and optical/coaxial outputs, and picture-in-picture audio cannot be heard.

Table 2 shows behavior with the **BITSTREAM PASS-THROUGH** setting.

Table 2 Outputs with the Bitstream Pass-through Audio Setting

Audio Output Format	HDMI	Coax/Optical	Analog
CD	PCM stereo	PCM stereo	Stereo
DVD	Source bitstream	off	off
Blu-ray Disc	Source bitstream	off	off

In **BITSTREAM PASS-THROUGH** mode, optical/coaxial audio outputs are silent.

2. Configure the **Number of audio channels**. Select the audio capabilities of the receiver. (Option is available only if **PLAYER DECODE** is selected.)

   If the audio level for movies is lower for M-Class players than the audio level for music and there are only two speakers, set the number of audio channels to two.

3. If using a coaxial or optical connection, select the audio formats that the receiver supports. If the receiver connected to coaxial or optical does not support DTS Digital Surround or Dolby Digital, these soundtracks can be decoded by the player and stereo PCM output instead.

   The **Audio receiver connected to optical/coax supports** option is used when a receiver, processor or display using the coaxial or optical S/PDIF connection has limited audio format decoding capabilities. Most modern receivers and processors offer comprehensive audio format decoding, and so the default option can be used. But for more limited devices, audio can be sent as PCM stereo only, or as any format except DTS Digital Surround.

4. Select **Show advanced audio settings** to override automatic information provided via the HDMI EDID or adjust other settings. See Figure 4-10.

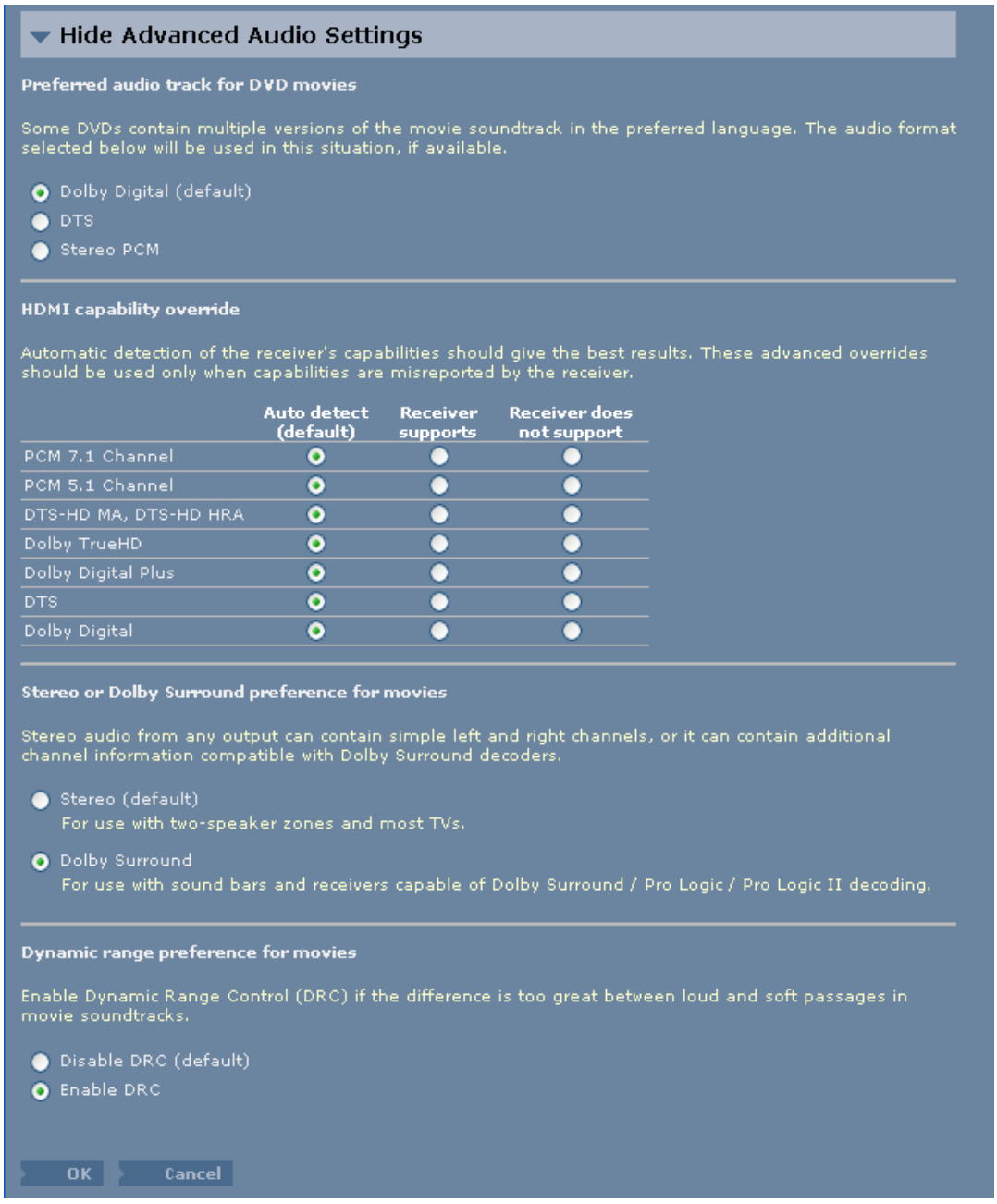

Hide Advanced Audio Settings
Preferred audio track for DVD movies
Some DVDs contain multiple versions of the movie soundtrack in the preferred language. The audio format selected below will be used in this situation, if available.
Dolby Digital (default)
DTS
Stereo PCM
HDMI capability override
Automatic detection of the receiver's capabilities should give the best results. These advanced overrides should be used only when capabilities are misreported by the receiver.
Auto detect (default)
Receiver supports
Receiver does not support
PCM 7.1 Channel
PCM 5.1 Channel
DTS-HD MA, DTS-HD HRA
Dolby TrueHD
Dolby Digital Plus
DTS
Dolby Digital
Stereo or Dolby Surround preference for movies
Stereo audio from any output can contain simple left and right channels, or it can contain additional channel information compatible with Dolby Surround decoders.
Stereo (default)
For use with two-speaker zones and most TVs.
Dolby Surround
For use with sound bars and receivers capable of Dolby Surround / Pro Logic / Pro Logic II decoding.
Dynamic range preference for movies
Enable Dynamic Range Control (DRC) if the difference is too great between loud and soft passages in movie soundtracks.
Disable DRC (default)
Enable DRC
OK
Cancel

Figure 4-10 Advanced Audio Settings for M500 and M300 Players

a. Audio track for DVD movies

   Some DVDs have more than one version of the movie soundtrack in the preferred language. Select which audio format to use when these movies are played.

b. HDMI capability override

   Audio receivers connected via HDMI automatically provide information via EDID used to determine the audio formats sent by

the player to the receiver. In rare cases, these capabilities must be overridden because of an EDID that is inaccurate or has been corrupted by an HDMI extender or switcher.

c. Stereo mode for movies

   Select whether PCM stereo audio from any output contains simple left and right channels, or contains additional channel information compatible with Dolby Surround decoders.

   If the output is connected to a sound bar or receiver capable of Dolby Surround / Pro Logic / Pro Logic II decoding, select **DOLBY SURROUND**.

d. Select the audio dynamic range for movies. If the range between soft and loud sounds is too great, select **ENABLE DRC**.

e. Click **OK** to save settings.

Configuring M-Class Player Audio Behavior to Match 1080p Player Audio Behavior

A 1080p Player sends stereo audio over analog, sends DVD source bitstream audio over optical/coaxial, and sends either of these two formats over HDMI, depending on the configuration setting.

The default behavior of an M-Class player is similar to the 1080p Player audio for optical/coaxial and analog outputs; however, the DVD source bitstream is converted to up to 5.1-channel PCM over HDMI. If an attached HDMI device does not support 5.1-channel PCM, stereo audio is used. There is no new configuration setting to match exact 1080p Player audio behavior.

Some audio configuration settings can be modified to resemble the volume levels and configuration settings of the 1080p Player more closely.

- **Number of audio channels** can be set to **Two-channel (always send stereo PCM)**.
- **Dynamic range preference for movies** can be set to **Enable DRC**.

Troubleshooting Audio Problems with M-Class Players

Problem	Action
No audio over analog, optical, coaxial, or HDMI connection	1. Play a CD, which always produces the stereo audio output. If there is no output, check for a problem with cabling, audio receiver or processor, or television. 2. If the CD plays, but movie audio does not, verify that the **PLAYER DECODE** setting is selected in the audio settings. With this setting all audio outputs are active. DVD and Blu-ray Disc audio share the same setting.
No audio over HDMI	The **BITSTREAM PASS-THROUGH** setting (a) sends lossless audio formats, which may not be accepted by the attached equipment, and (b) does not play picture-in-picture audio. When **PLAYER DECODE** is selected, there is 5.1-channel PCM audio over HDMI for both DVD and Blu-ray movies. If the attached device does not support 5.1-channel PCM, at least stereo PCM can be heard.

Video Settings for the Mini System and 1080p Player

Figure 4-11 shows video configuration settings for the Mini System and 1080p Player.

VIDEO
AUDIO
LANGUAGE
NETWORK
CONTROL
REGION
Select Primary Video Output
Primary Video Output :
HDMI
Video and audio performance will be optimized for the primary video output selected above. Non-primary outputs will also be active, but will not typically benefit from any internal video processing.
Note: The copy control restrictions in the DVD CCA's CSS License forbid manufacturers from providing upscaled DVD video content over analog outputs. DVDs may be played over component video at 480p and 576p, but not at higher resolutions.
Select Video Mode For Each Media Format
These video modes are used for the primary video output only:
Media Format
Video Mode
Onscreen display
Use Highest Available Resolution
NTSC 16:9 widescreen DVD
Use Highest Available Resolution
NTSC 4:3 full screen DVD
Use Highest Available Resolution
PAL 16:9 widescreen DVD
Use Highest Available Resolution
PAL 4:3 full screen DVD
Use Highest Available Resolution
HD video
Use Highest Available Resolution
Video Modes for Remaining Video Outputs:
Component
The onscreen display and DVDs will be output in 480i/576i and all HD video will be output in its native video mode.
S-Video/Composite
The onscreen display and all video will be output in 480i/576i.
Select How Full Screen 4:3 Movies Will Appear On A 16:9 Display
Don't stretch movie - add vertical black bars on either side
This will not distort the image but will leave parts of the screen blank.
Stretch movie horizontally to fill the 16:9 screen
This will distort the image but the entire screen will be filled.
Select How Letterboxed 4:3 Movies Will Appear On A 16:9 Display
Zoom image to fit the display
The letterboxed movie will be scaled up to fill as much of the 16:9 display as possible but this may result in visual artifacts.
Add sidebars
This will result in a black frame around the entire movie.

Figure 4-11 Video Settings for the Mini System or 1080p Player (top)

1. Select the **Primary Video Output** format from the drop-down menu. The primary video output is typically the output that connects the player to the primary display device (the display most watched). Default setting is **HDMI**.

The player synchronizes audio and video for the primary video output, although all video outputs remain active. The video outputs cannot be controlled independently.

2. Select **Video Mode** from the drop-down menus. Video mode choices for other video outputs are automatically set depending on the primary video output selected and its video modes. Copy control restrictions forbid outputting DVD content at resolutions higher than 480p or 576p over component video outputs.

CAUTION

Selecting the wrong primary video output or the wrong video modes can result in bad color, flickering, mismatched aspect ratio, or no picture at all

Consult display documentation if necessary.

Do not choose any video mode that the display does NOT support. For example, if the display does not support PAL video modes, select **DO NOT PLAY** for PAL media formats. If a user tries to play a PAL formatted movie, a message appears stating that the display does not support PAL format.

The video modes for other video outputs are displayed below the drop-down menus.

3. **Select How full-screen 4:3 movies will appear on a 16:9 display**. Select the radio button to determine how movie appears on the screen.
   - **DON'T STRETCH MOVIE - ADD VERTICAL BLACK BARS ON EITHER SIDE** causes black bars to appear on the sides of a 4:3 image.
   - **STRETCH MOVIE HORIZONTALLY TO FILL THE 16:9 SCREEN** causes the image to fill the display screen but distorts 4:3 images.
4. Select **How Letterboxed 4:3 Movies appear on 16:9 displays**.

   Some 4:3 DVDs are letterboxed, containing black bars above and below the image to maintain the theatrical aspect ratio. When viewed on a widescreen display, black bars are sometimes added to the left and right of 4:3 DVDs, which can lead to black bars on all four sides of the image. The small image in the center of a black field is sometimes referred to as a “postage stamp” image.

   Click the radio button next to **ZOOM** to fit the display or **ADD SIDEBARS**. The **ZOOM** option fills the screen, but can lead to distortion. See Figure 4-12.

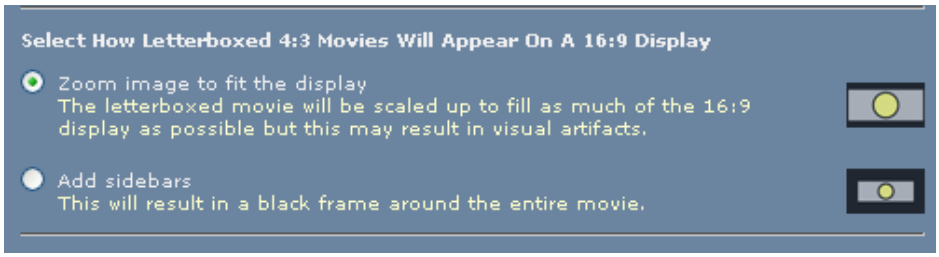

Select How Letterboxed 4:3 Movies Will Appear On A 16:9 Display
Zoom image to fit the display
The letterboxed movie will be scaled up to fill as much of the 16:9 display as possible but this may result in visual artifacts.
Add sidebars
This will result in a black frame around the entire movie.

Figure 4-12 Letterbox Effect

Note: The movie player can only zoom letterboxed 4:3 movies recognized by the Kaleidescape Movie Guide.

5. **Select Black Level for component video**. Click the radio button next to **0 IRE BLACK LEVEL SETUP** (recommended) or **7.5 IRE BLACK LEVEL SETUP**. See Figure 4-13.

Note: This setting only affects video displays that use component video as the primary video output.

Select Black Level For Component Video
0 IRE black level setup (recommended)
Sometimes referred to as darker or enhanced black level. This setting should work well with most displays and processors. If this setting produces loss of detail in dark areas of the image, try 7.5 IRE instead. Compatible with the EIA-770.2 video standard.
7.5 IRE black level setup
Sometimes referred to as standard black level. If this produces an overly bright black level, try 0 IRE instead. Compatible with the EIA-770.1 video standard.
Select Detail Enhancement for HDMI Video
Detail enhancement will only be applied to upscaled video output over HDMI at 720p, 1080i or 1080p. If you select Low, Medium or Full below, you may wish to disable your display device's Sharpness control to achieve optimum picture quality.
Note: The recommendations below should be used as guidelines only; if you do not like the resulting video image, try more or less detail enhancement.
None
This setting is recommended if you are using an external video processor, or if your display device's Sharpness control is enabled.
Low (default)
This setting is recommended for use with very large displays, such as a front projection screen in a home theatre, or when viewers will be close to the display.
Medium
This setting is recommended for use with most LCD and plasma displays.
Full
This setting provides maximum detail enhancement.
OK
Cancel

Figure 4-13 Video Settings for the Mini System or 1080p Player (bottom)

7.5 IRE black level refers to the EIA-770.1 video standard, which uses 7.5 IRE for black. This is sometimes referred to as standard black level.

0 IRE black level refers to the EIA-770.2 video standard, which uses 0 IRE for black and is referred to as darker or enhanced black level.

The **0 IRE** selection works well with most displays and processors. If this setting produces loss of detail in dark areas of the image, try 7.5 IRE instead.

Note: If the display has been calibrated and the black level is changed, the display must be recalibrated for correct black and white levels.

6. Select **Detail enhancement for HDMI video**. Click the radio button next to **NONE**, **LOW** (default setting)**, MEDIUM** or **FULL.**

   Either the movie player or video processor/scaler can add detail enhancement (influencing how sharp the edges of scaled video appear) to upscaled HDMI video output. If the video processor/scaler performs detail enhancement, select **NONE**. Otherwise, select a level that matches the type of the display.

7. Click **OK** to save settings.

Audio Settings for the Mini System and 1080p Player

Figure 4-14 shows the audio configuration settings for the Mini System.

VIDEO
AUDIO
LANGUAGE
NETWORK
CONTROL
REGION
SCREEN MASKING
Select your preferred audio track when playing a movie:
Dolby Digital (default)
DTS
When a DTS soundtrack is unavailable, the Dolby Digital soundtrack will be used.
DTS soundtracks are not played on any analog outputs, including stereo-only equipment connected through an HDMI cable.
Stereo (PCM)
Select your HDMI audio output preference:
Automatically detect audio capabilities (default)
This option will send multichannel (Dolby Digital/DTS), stereo (PCM), or silence through the HDMI connection based on the capabilities reported by the equipment.
Detecting audio capabilities through an A/V receiver or HDMI switch may reduce the accuracy of these results. If audio is not present or playback is incorrect, try one of the preferences below.
Always send multichannel audio (Dolby Digital/DTS)
Select this option if the audio capabilities are incorrectly reported and the audio equipment supports Dolby Digital or DTS. Stereo (PCM) audio will be sent if a Dolby Digital or DTS soundtrack is not available for the movie, or your preferred audio track setting is set to stereo (PCM).
Always send stereo audio (PCM)
Select this option if the audio capabilities are incorrectly reported and the audio equipment supports stereo (PCM) audio. If your preferred audio track is DTS, this setting will cause silence to be sent over HDMI because DTS soundtracks are not played on stereo outputs.
OK
Cancel

Figure 4-14 Audio Settings for the Mini System

1. Select type of preferred **Audio for DVD Movies**. Click the radio button next to **DOLBY DIGITAL** (default), **DTS** or **PCM.**

Non-M-Class player optical and coaxial digital outputs are always active, regardless of any other settings. HDMI audio is only active if the HDCP handshake is successful. Analog stereo outputs are active for any audio except DTS Digital Surround.

Audio from movies with any audio format is output over HDMI, optical and coaxial cables, and the audio system must do the decoding.

Note: The movie player always outputs PCM audio when playing a CD.

2. Select the HDMI audio output preference. Select **AUTO DETECT** (default), **MULTICHANNEL**, or **STEREO**. This option is used to override the information automatically provided by the receiver via the HDMI EDID.
3. Click **OK** to save settings.

Video Settings for the Movie Player and Movie Player 2 (KPLAYER-2000, KPLAYER-2500, KPLAYER-5000)

Figure 4-15 shows video configuration settings for older Kaleidescape players.

Note: Each category of options has an amber text help link.

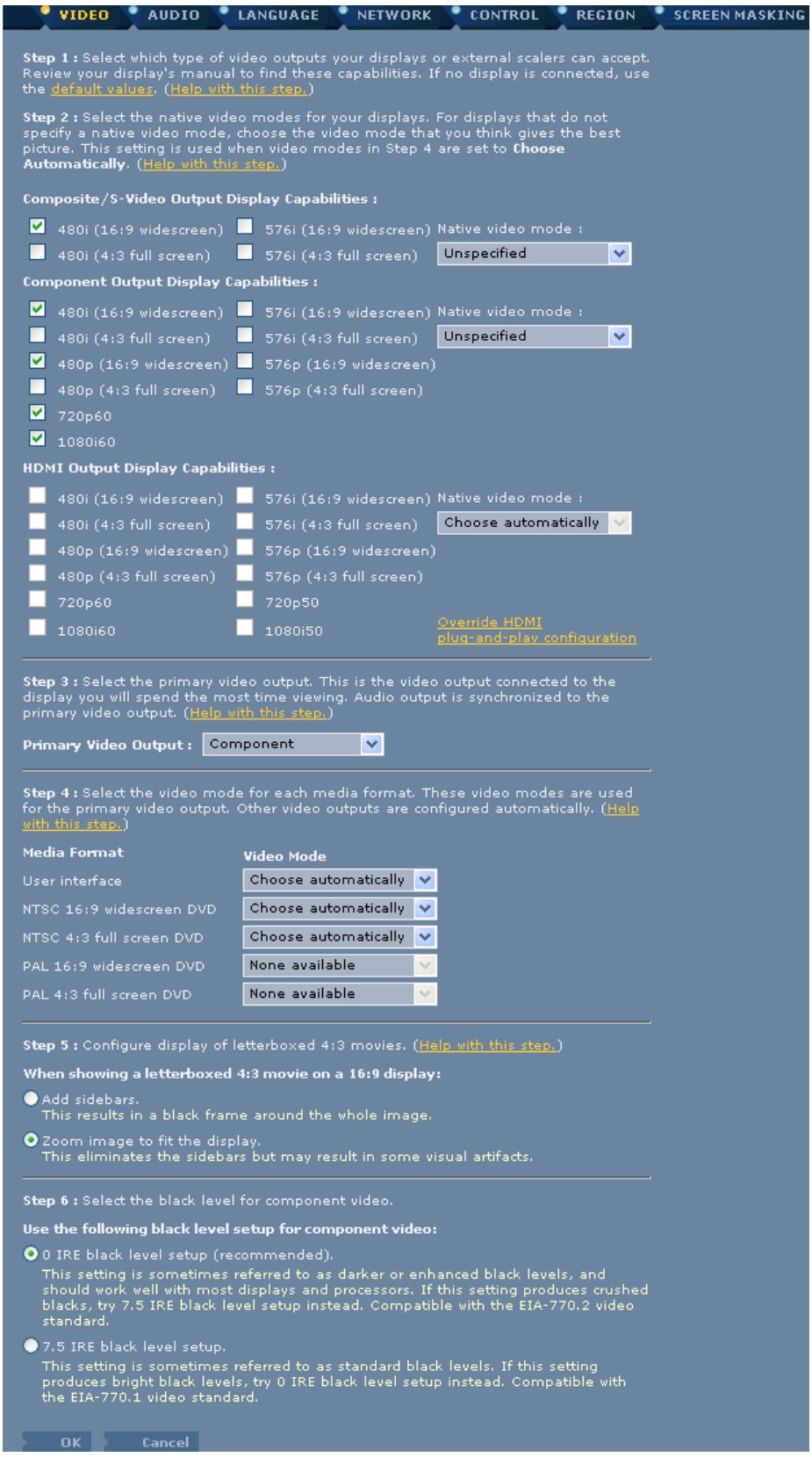

VIDEO
AUDIO
LANGUAGE
NETWORK
CONTROL
REGION
SCREEN MASKING
Step 1 : Select which type of video outputs your displays or external scalers can accept. Review your display's manual to find these capabilities. If no display is connected, use the default values. (Help with this step.)
Step 2 : Select the native video modes for your displays. For displays that do not specify a native video mode, choose the video mode that you think gives the best picture. This setting is used when video modes in Step 4 are set to Choose Automatically. (Help with this step.)
Composite/S-Video Output Display Capabilities :
480i (16:9 widescreen)
576i (16:9 widescreen)
Native video mode :
480i (4:3 full screen)
576i (4:3 full screen)
Unspecified
Component Output Display Capabilities :
480i (16:9 widescreen)
576i (16:9 widescreen)
Native video mode :
480i (4:3 full screen)
576i (4:3 full screen)
Unspecified
480p (16:9 widescreen)
576p (16:9 widescreen)
480p (4:3 full screen)
576p (4:3 full screen)
720p60
1080i60
HDMI Output Display Capabilities :
480i (16:9 widescreen)
576i (16:9 widescreen)
Native video mode :
480i (4:3 full screen)
576i (4:3 full screen)
Choose automatically
480p (16:9 widescreen)
576p (16:9 widescreen)
480p (4:3 full screen)
576p (4:3 full screen)
720p60
720p50
1080i60
1080i50
Override HDMI plug-and-play configuration
Step 3 : Select the primary video output. This is the video output connected to the display you will spend the most time viewing. Audio output is synchronized to the primary video output. (Help with this step.)
Primary Video Output : Component
Step 4 : Select the video mode for each media format. These video modes are used for the primary video output. Other video outputs are configured automatically. (Help with this step.)
Media Format
Video Mode
User interface
Choose automatically
NTSC 16:9 widescreen DVD
Choose automatically
NTSC 4:3 full screen DVD
Choose automatically
PAL 16:9 widescreen DVD
None available
PAL 4:3 full screen DVD
None available
Step 5 : Configure display of letterboxed 4:3 movies. (Help with this step.)
When showing a letterboxed 4:3 movie on a 16:9 display:
Add sidebars.
This results in a black frame around the whole image.
Zoom image to fit the display.
This eliminates the sidebars but may result in some visual artifacts.
Step 6 : Select the black level for component video.
Use the following black level setup for component video:
0 IRE black level setup (recommended).
This setting is sometimes referred to as darker or enhanced black levels, and should work well with most displays and processors. If this setting produces crushed blacks, try 7.5 IRE black level setup instead. Compatible with the EIA-770.2 video standard.
7.5 IRE black level setup.
This setting is sometimes referred to as standard black levels. If this setting produces bright black levels, try 0 IRE black level setup instead. Compatible with the EIA-770.1 video standard.
OK
Cancel

Figure 4-15 Video Settings for Older Kaleidescape Players

1. Select all the types of outputs that the display supports by checking the checkboxes.
2. Select native video modes for the displays from the drop-down menus. The native mode refers to the number of pixels in the display resolution.
3. Select **Primary video output** from the drop-down menu.
4. Select the video mode for each format from the drop-down menus. The video mode can be selected automatically or can be specified. When automatic is selected, the system selects based on the capabilities selected above. Specifying a mode is usually recommended.
5. Configure the letterbox display. Click the applicable radio button.
6. Select black level for component video. Click the applicable radio button.
7. Click **OK** to save settings.

Audio Settings for the Movie Player and Movie Player 2 (KPLAYER-2000, KPLAYER-2500, KPLAYER-5000)

See Audio Settings for the Mini System and 1080p Player on page 84.

Language Settings

A preferred language for movie playback can be configured for each player.

1. Select the **LANGUAGE** tab, then select the **Preferred Language** from the drop-down menu. See Figure 4-16.

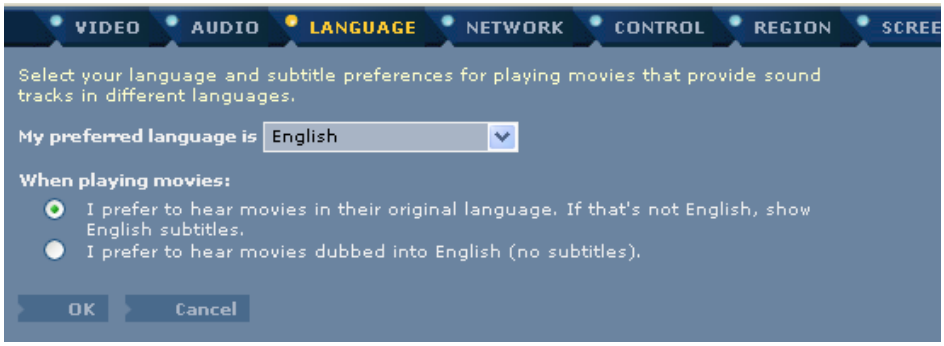


Figure 4-16 LANGUAGE Tab Settings

If **NONE** is selected, movies play in the original language.

If a language is selected, movies from a country that speaks the preferred language are played with the original soundtrack without subtitles.

2. For movies from countries that do not speak the preferred language, select whether or not to see **subtitles** or **hear a soundtrack dubbed** in

the preferred language. (The disc must contain subtitles or an overdub soundtrack in the selected language for these options to be active.)

3. Click **OK** to save settings.

Network Settings

Kaleidescape components, by default, obtain IP addresses from a DHCP server. Use the following procedure if a static IP address must be set (used with control systems) or to change other network parameters.

1. Select the **NETWORK** tab. Information about the current network configuration for the component is displayed. See Figure 4-17.

VIDEO
AUDIO
LANGUAGE
NETWORK
CONTROL
REGION
SCREEN MASK
This device can obtain its IP configuration automatically if your network supports DHCP. If your network does not support DHCP, you will need to manually set the IP Configuration:
Current Network Configuration
IP Address : 192.168.16.100
Subnet Mask : 255.255.255.0
Default Gateway : 192.168.16.1
Preferred DNS Server : 10.100.0.92
Secondary DNS Server : 10.100.0.18
Obtain IP Configuration automatically using DHCP
Use the following IP configuration:
IP Address :
Subnet Mask :
Default Gateway :
Preferred DNS Server :
Secondary DNS Server :
(optional)
This device may connect to the Internet to access online content for BD-Live enabled Blu-ray Discs. If you wish to restrict access to online content for this device, choose Deny Internet Access below.
Allow Internet Access
Deny Internet Access
OK
Cancel

Figure 4-17 NETWORK Tab Settings

2. Most control systems that communicate via TCP/IP require a fixed address for each component connected to the control system. The safest and easiest way to do this is to create a DHCP reservation in the router and use the default **Obtain IP configuration automatically** setting.

   DHCP reservations help prevent duplicate addresses from being assigned, provide simple centralized management, and provide automatic updates when network settings change.

With DHCP reservations, network parameters such as IP address, subnet mask, router IP, and DNS servers are configured in one place (at the DHCP server). If any of these parameters change, only the DHCP server has to be modified. For most installations, the DHCP server built into the router is perfectly adequate.

DHCP reservations are usually made using MAC addresses. The procedure to create DHCP reservations is device-specific. Refer to the documentation for the router or DHCP server.

If DHCP reservations are not an option, select **Use the following IP configuration** and manually enter the IP Address, Subnet Mask, Default Gateway, and DNS Servers. This information is required for interactive BD-Live features of Blu-ray Discs to operate correctly

3. For M-Class players, select the radio button to allow or deny Internet access through BD-Live. If not interested in chat, downloaded trailers, or other Internet features, or have privacy concerns, select **DENY INTERNET ACCESS**.
4. Click **OK**.

Control Settings

Use the following procedure to configure control settings.

1. Select the **CONTROL** tab. Figure 4-18 shows the control settings for a server. Figure 4-19 shows the control settings for a player.

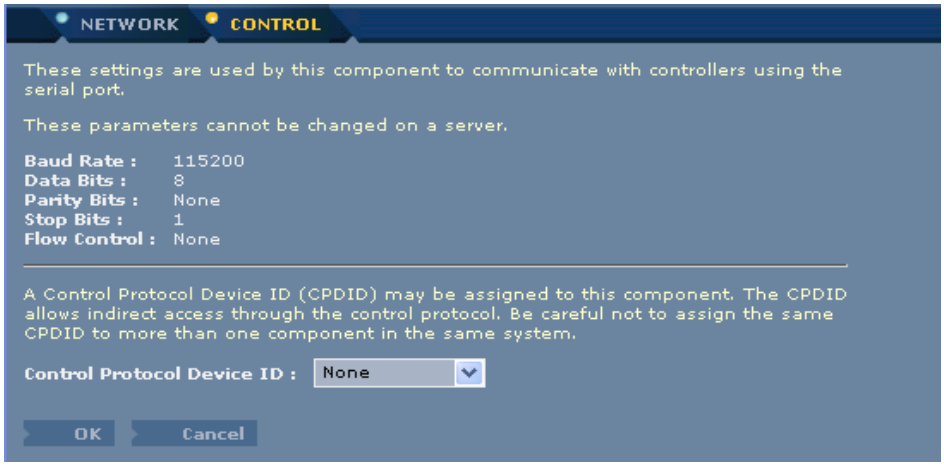

NETWORK
CONTROL
These settings are used by this component to communicate with controllers using the serial port.
These parameters cannot be changed on a server.
Baud Rate : 115200
Data Bits : 8
Parity Bits : None
Stop Bits : 1
Flow Control : None
A Control Protocol Device ID (CPDID) may be assigned to this component. The CPDID allows indirect access through the control protocol. Be careful not to assign the same CPDID to more than one component in the same system.
Control Protocol Device ID : None
OK
Cancel

Figure 4-18 CONTROL Tab Settings for Servers

VIDEO
AUDIO
LANGUAGE
NETWORK
CONTROL
REGION
These settings are used by this component to communicate with controllers using the serial port.
Baud Rate :
19200
Data Bits :
8
Parity Bits :
None
Stop Bits :
1
Flow Control :
None
A Control Protocol Device ID (CPDID) may be assigned to this component. The CPDID allows indirect access through the control protocol. Be careful not to assign the same CPDID to more than one component in the same system.
Control Protocol Device ID :
None
This component can respond to different infrared (IR) code sets. Mark the checkboxes corresponding to the code sets that you wish to use.
Kenwood
Toshiba
Some IR remotes use the same pair of buttons for skipping chapters and for paging through lists. If the remote control used with this onscreen display has these kinds of buttons, but the button behaviour appears to be reversed, choose Use Default Paging Button Behaviour below.
Use Default Paging Button Behaviour
Use Swapped Paging Button Behaviour
OK
Cancel

Figure 4-19 CONTROL Tab Settings for Players

2. Select the appropriate serial port settings for the player from the drop-down menus. Table 3 shows server settings and default serial port settings for players. Server control settings cannot be changed but control software settings must match the server control settings.

Table 3 Server Settings and Default Player Control Settings

	Server	Player
Baud Rate	115 200	19 200
Data Bits	8	8
Parity Bits	none	none
Stop Bits	1	1
Flow Control	none	none

3. Select the **Control Protocol Device ID** from the drop-down menu. The Control Protocol Device ID (CPDID) allows indirect access to the

Kaleidescape component through another component. This is called **command routing**. Assigning a unique device identifier allows a controller to communicate with multiple Kaleidescape devices with one connection.

The only module provided by Kaleidescape that requires CPDIDs to be set is the AMX module. Other modules communicate directly with the player.

Note: It is NOT usually necessary to connect a server to a control system. The server is generally used as a gateway to perform command routing to other devices with CPDIDs.

When connecting a serial controller directly to a player or Mini System via an RS-232 control port, communication parameters must be set to match the serial controller.

The M300 Player has no serial port but can be controlled directly via TCP/IP or IR, or a CPDID can be set for routing control protocol commands from another Kaleidescape component with a serial port.

For detailed information about control protocol configuration, refer to the Kaleidescape System Control Protocol Reference Manual at www.kaleidescape.com/go/control-protocol.

- Set the **Control Protocol Device ID** to **NONE** if control is linked directly to the player.
- If command routing is used, select a number from the drop-down menu.

4. Select the infrared (IR) code set by selecting one or more of the checkboxes. Both the Kenwood and Toshiba options are selected by default to provide maximum flexibility when programming an IR remote. Click **OK**.

   To turn off a code set, uncheck the box and click **OK**.

5. Select IR remote behavior for the paging button by clicking one of the two radio buttons.

Note: If the paging button behavior seems reversed, select the other option.

Region Settings

Blu-ray Discs

Select the **REGION** tab to view the Blu-ray Disc region code of an M-Class player. See Figure 4-20.

VIDEO
AUDIO
LANGUAGE
NETWORK
CONTROL
REGION
Blu-ray Discs
This player is a region A Blu-ray Disc player. It can play back any Blu-ray Disc designed for region A, including Blu-ray Discs that are designed for multiple regions that include region A: AB, AC, ABC. You cannot change the Blu-ray Disc region of this player.
DVDs
The majority of DVDs are authored for specific geographic regions. For example, region 1 DVDs are for the United States and Canada and region 2 DVDs are for Japan, Europe, Egypt, South Africa and the Middle East. You can configure the region setting of this Kaleidescape component using the Region drop-down list. The component will only be able to import or play from the disc tray DVDs that have the same region as this setting. The component can play imported DVDs from any region.
Caution: You can only change this configuration a total of four times. After four changes, you will no longer be able to change this setting. You have never changed this setting. You have four more changes.
Before changing the region code, set When Import Finishes to Do not eject disc for this component (on the Components page of the installer web utility) and click OK. Then insert a DVD of the desired region code into the disc tray and choose the desired region code from the drop-down menu below.
Changes Remaining : 4
Region : 1 - United States, Canada
OK
Cancel

Figure 4-20 REGION Tab Settings

M-Class players are shipped with Blu-ray Disc region A or region B. The Blu-ray Disc region code of an M-Class player cannot be changed by the end user or installer. Only Blu-ray Discs compatible with the region code can be played. Many Blu-ray Discs are region-free and can be played on any M-Class player.

Kaleidescape does not recommend mixing players and discs with different Blu-ray regions in the same system because not all players would be able to play all Blu-ray movies.

DVDs

Most DVDs are authored for a specific region. Players must be set to the region required to import and play DVDs from the tray. Any player can play a movie from the server once it has been imported, regardless of the DVD region code. The DVD region is identified in the **Region** drop-down menu. See Figure 4-20.

Players in the same system can be set to different DVD region codes.

Use the following procedure to change the region setting to import a DVD from another region.

1. Insert a DVD from the region in the disc tray on Mini System or player.

Note: When inserting a DVD from a different region, disable automatic tray ejection temporarily to keep the DVD in the player during the region change. Open the **COMPONENTS** tab of the browser interface and select **DO NOT EJECT DISC** from the **When Import Finishes** drop-down menu. Click **OK** to save changes.

2. Select the **REGION** tab.
3. Select the new required DVD region from the **Region** drop-down menu. Default is **1 - UNITED STATES, CANADA**.
4. Click **OK**.

Note: The region setting can only be changed four times. Therefore import all content from the same region at one time. The region setting does not have to be changed for playback from the server.

Note: Direct playback DVDs (not imported into the system) only play if DVDs match the current region setting of the player.

Screen Masking

Movie players send control messages with aspect ratio and screen masking information to the control system every time a movie plays.

Control systems use this information to position screen masks, engage special projection lenses, and adjust the aspect ratio mode of the display device. The player can be configured to ensure that masks do not cover any part of the onscreen display or subtitles (for DVDs).

Note: If screen masking does not adjust for a movie, the movie might not be recognized by the Kaleidescape Movie Guide. Use the Kaleidescape loan process to send the disc for processing. For more information go to www.kaleidescape.com/loan.

The Kaleidescape Movie Guide includes aspect ratio information for most movies. This information can be used by a control system to automate screen masking and anamorphic lens movement, to optimize the presentation of each movie. A small percentage of movies, including the Blu-ray release of *The Dark Knight*, has more than one aspect ratio within the feature. For these movies, the Movie Guide indicates a single aspect ratio so that none of the active image is cropped or projected into the masks. This method results in unmasked black bars during some of the movie, but avoids distracting lens or mask movement during the movie.

- M-Class players feature only a 16:9 user interface.
- Most home theaters with masking have constant image height masking.

Use the following procedure to set screen masking options and subtitle repositioning

1. Select the **SCREEN MASKING** tab. See Figure 4-21.

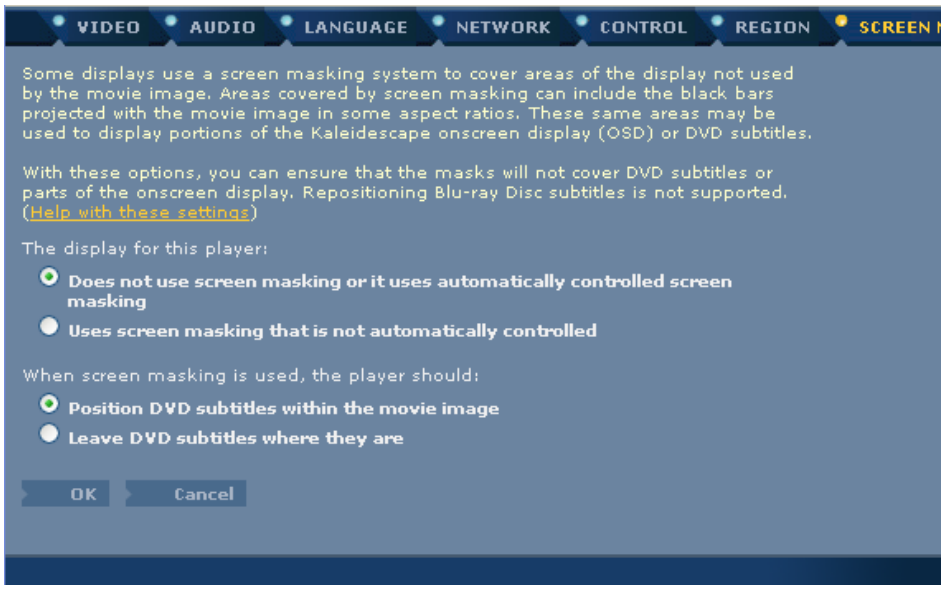

VIDEO
AUDIO
LANGUAGE
NETWORK
CONTROL
REGION
SCREEN
Some displays use a screen masking system to cover areas of the display not used by the movie image. Areas covered by screen masking can include the black bars projected with the movie image in some aspect ratios. These same areas may be used to display portions of the Kaleidescape onscreen display (OSD) or DVD subtitles.
With these options, you can ensure that the masks will not cover DVD subtitles or parts of the onscreen display. Repositioning Blu-ray Disc subtitles is not supported.
(Help with these settings)
The display for this player:
Does not use screen masking or it uses automatically controlled screen masking
Uses screen masking that is not automatically controlled
When screen masking is used, the player should:
Position DVD subtitles within the movie image
Leave DVD subtitles where they are
OK
Cancel

Figure 4-21 SCREEN MASKING Tab Settings

2. Select the **type of screen masking** on the display. Click on the appropriate radio button.

   a. Select **DOES NOT USE SCREEN MASKING OR IT USES AUTOMATICALLY CONTROLLED SCREEN MASKING** if the display uses an automatically controlled screen masking system.

      This option causes the player to reposition onscreen display elements only when the player receives control messages indicating that screen masking is being used.

   b. Select **USES SCREEN MASKING THAT IS NOT AUTOMATICALLY CONTROLLED** if screen masking is not automatically controlled.

      With this option, the player operates as if screen masking is present even without receiving a control message indicating masking is in use.

      - Select this option if the control system does not send messages to the player, even though the control system might be using messages from the player to control the screen masking.
      - This option is also appropriate for screen masking systems that are controlled manually or fixed to a certain aspect ratio. When the player is set to use screen masking not automatically controlled, the player always shows display elements within the movie image so that elements are not covered by screen masking.

Note: For more information on programming a control system for automatic screen masking, refer to the control system documentation on www.kaleidescape.com/support/control-systems.

3. Select **how to display subtitles** when screen masking is used. Click on the appropriate radio button.

   DVDs often place subtitles below the movie image to avoid interfering with the movie image. Screen masking systems sometimes cover subtitles positioned below the movie image.

   (Unless configured for use with a screen masking system, the player does not change the position of subtitles. Subtitles appear in the original position.)

   a. Select **POSITION DVD SUBTITLES WITHIN THE MOVIE IMAGE** to cause the player to position subtitles within the movie image. With this option, subtitles can always be read even when part of the screen is covered by masking or cropped by a lens.

   b. Select **LEAVE DVD SUBTITLES WHERE THEY ARE** if the screen masking system is designed to leave room for subtitles at the bottom of the screen. Subtitles appear in the original position, which can place them below the movie image. Display elements continue to be placed within the movie image.

Note: Subtitles can be repositioned only for DVD movies (not Blu-ray Discs).

Note: Click the **Help file** link for screen masking to see pictorial examples.

4. Click **OK**.

Viewing and Changing Groups

When multiple Kaleidescape servers are on the same local subnet, servers first appear as individual systems. Each new server defines a group on a subnet.

Servers on the same local subnet can be placed in groups to combine storage to form one movie and music library for players in the same group.

Note: If there is only one group of servers, players automatically connect to that group even if not explicitly placed in a group.

With multiple groups of servers, each component must be associated with a group after being added to the network and powered on. The front panel of a player glows amber until placed in a group with a server.

Use the following procedure to configure groups.

1. Select the **GROUPS** tab. The Groups page displays all groups on the subnet. See Figure 4-22.

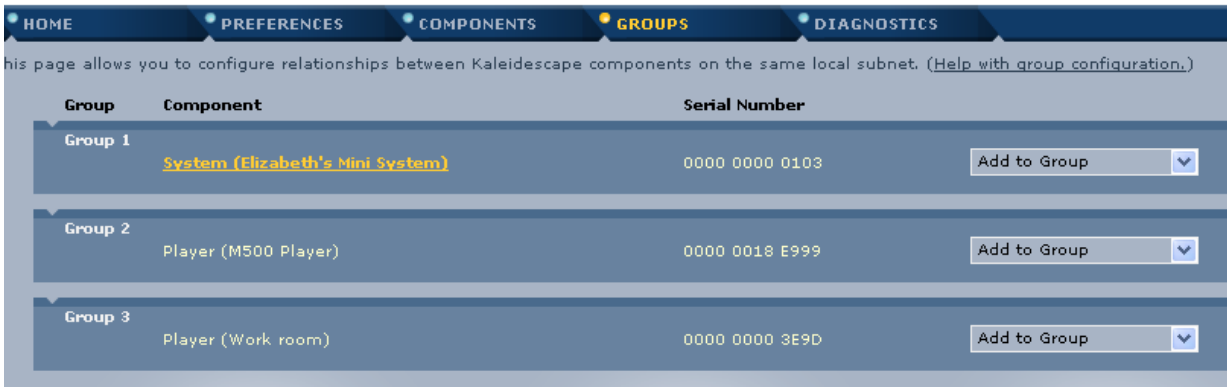


Figure 4-22 Installer GROUPS Page

2. To add a component to a group, find the component, then select the group from the **ADD TO GROUP** drop-down menu.

   The page reloads and the component now has an amber **REMOVE FROM GROUP** link to remove the component from the group.

3. To remove a component from a group, click the **REMOVE FROM GROUP** link. The page reloads and the component now has a drop-down menu.

When setting up multiple systems, be careful to select and add components to the correct groups.

Assigning Bulk Loaders and Speed Readers to Groups

If importing content with a Bulk Loader or Speed Reader, assign these components to the correct group. If these components are not in a group, the components cannot import content into a server.

Viewing Diagnostic Information

A Kaleidescape server periodically communicates with several Kaleidescape services. The Diagnostics page provides information to help verify that the server is correctly configured.

Use the following procedure to view services information.

1. Select the **DIAGNOSTICS** tab. See Figure 4-23.

Figure 4-23 Installer DIAGNOSTICS Page

2. Check **Kaleidescape Services DNS Name Resolution** to verify that the server can resolve the IP address for each Kaleidescape service listed. If not, change the network settings for the DNS server address.

Note: If a time appears in the **Last Success** column, this is the time the server successfully identified the IP address of the service.

3. Check the **Kaleidescape Services Summary** for information about when the server last attempted and succeeded to use each service.

Log Upload	Sends information from the server to Kaleidescape for alerts, system dashboards, and improving Movie Guide information.
Movie Guide	Provides updated movie information, such as synopses, bookmarks, and cover art.
Music Guide	Provides updated music information such as album title, artist, genre, year of release, and cover art.
Software Download	Provides software updates.
Time Synchronization	Provides the current time.
Version Query	Indicates when a software update is needed.

4. Check the **Duplicate IP Address Detection Summary** to discover if any duplicate IP addresses are associated with Kaleidescape components. This condition must be corrected to prevent serious networking problems.
5. To resolve duplicate IP addresses, see Troubleshooting Problems with the Network on page 110.

Section 5
Control Systems

Kaleidescape players support almost any control device.

- Infrared (IR) remotes
- Touch panels
- Computer with a web browser
- Web tablets
- One-way keypads
- iPhone or iPod software applications

Kaleidescape provides control modules along with touch panel templates and sample programs for most leading control systems. Kaleidescape also provides databases and IR codes for popular IR remotes.

For specific product support including modules and reference manuals, go to www.kaleidescape.com/support/control-systems.

The following figures show examples of typical setups for Kaleidescape players and control devices.

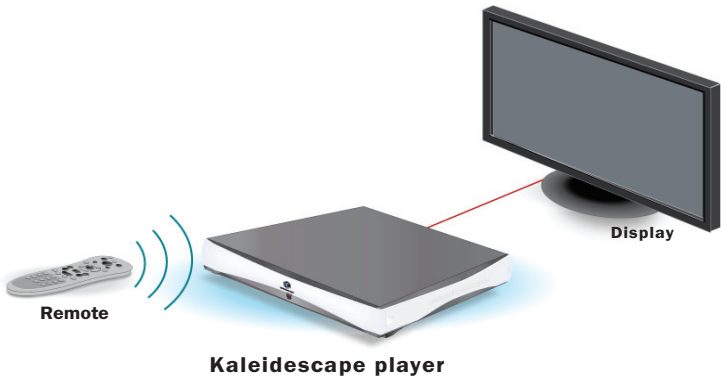


Figure 5-1 Kaleidescape Player and IR Remote Control

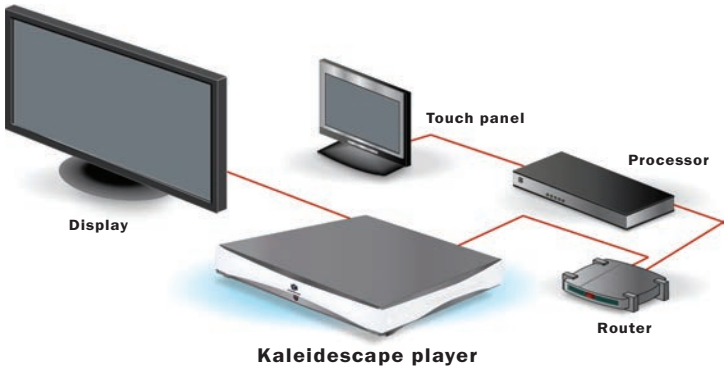


Figure 5-2 Kaleidescape Player and Touch Panel

Figure 5-3 Kaleidescape Player and Web Tablet

Communication

A control device communicates with a Kaleidescape System using a simple text-based protocol over Ethernet or RS-232, or IR. Although connected to a single component, a control device can route messages to any Kaleidescape component using device ID numbers or serial numbers. IR control cannot be routed like serial and Ethernet commands.

Control devices can use three types of control interfaces.

- Ethernet
- RS-232
- IR (one-way communication)

Kaleidescape recommends using **TCP/IP over Ethernet** for control connection in most cases. TCP/IP over Ethernet has several advantages over RS-232.

- Enables significantly faster communications
- Provides error detection and correction
- Uses standard Cat5/5e/6 cable and pinout
- Allows longer cable run
- Requires only a single network port
- Usually requires no additional equipment or wiring

Bandwidth can be a key issue, especially with multi-zone systems. Text-based feedback from several zones can cause noticeable response latency over an RS-232 connection. This is especially critical if controlling multiple Kaleidescape components through a single RS-232 port.

If the controller does not support an Ethernet connection, an RS-232 connection can provide the same level of control. If the controller does not support either an Ethernet or RS-232 connection, IR can be used for one-way control.

For more information on control connections, refer to the *Kaleidescape System Control Protocol Reference Manual* at www.kaleidescape.com/go/control-protocol and the IR Hex codes at www.kaleidescape.com/go/ir-hex.

Types of Control Devices

Kaleidescape provides a wide range of templates, modules, and sample programs for control systems from several manufacturers.

Some manufacturers also provide templates, modules and IR libraries to control Kaleidescape movie servers.

Control devices can be simple IR remotes or touch panels.

IR Remote Control

The simplest control device is a generic IR remote control for a DVD player. Every M-Class player and Mini System comes with a Kaleidescape Remote. Insert the batteries that come with the remote; the remote does not have to be programmed.

IR Code Sets

The Kaleidescape movie player supports two major infrared remote control code sets.

- Code set used by Toshiba DVD players and other manufacturers including Philips, Magnavox, Zenith, Onkyo, and Marantz
- Code set used by Kenwood DVD players

Types of Remotes

IR remotes (other than the Kaleidescape Remote) fall into the following basic categories:

- Pre-programmed
- Learning
- PC Programmable

Pre-programmed Remotes

Pre-programmed remotes only require setting the remote to control a Toshiba or Kenwood DVD player. Custom buttons that jump directly to Kaleidescape menu selections are not available.

Learning Remotes

Learning remotes can be used two ways: as a general remote with a Toshiba or Kenwood code set, or set to accept (learn) Kaleidescape-specific commands from a device that can generate these commands (for example, the Kaleidescape Remote).

PC Programmable Remotes

PC Programmable remotes can support commands specific to the Kaleidescape interface and provide a more complete experience. The manufacturer provides software that allows the remote to be programmed via a computer. This type of programming often allows IR codes to be imported in hex format (usually copying and pasting the codes into a text box), or from a Philips CCF file.

For a list of all IR codes (in hex) or CCF format available from Kaleidescape, or for the CCF file, go to www.kaleidescape.com/go/ir.

Templates are available for download for RTI, URC, and Elan remotes. Kaleidescape is also included in IR code database libraries for URC, Logitech Harmony and Opus.

Computer with a Web Browser

The Kaleidescape System can be controlled from a web browser using the control panels on the browser interface.

Access the browser interface, go to the **HOME** tab, and select a player or music zone from the **CONTROL PANELS** section on the bottom right of the **Home** page. See Figure 5-4.

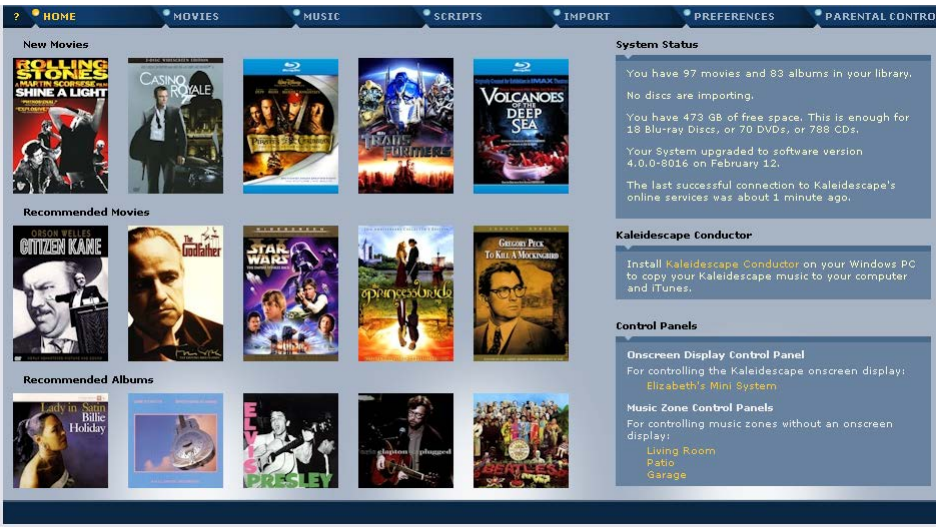

HOME
MOVIES
MUSIC
SCRIPTS
IMPORT
PREFERENCES
PARENTAL CONTRO
New Movies
Recommended Movies
Recommended Albums
System Status
You have 97 movies and 83 albums in your library.
No discs are importing.
You have 473 GB of free space. This is enough for 18 Blu-ray Discs, or 70 DVDs, or 788 CDs.
Your System upgraded to software version 4.0.0-8016 on February 12.
The last successful connection to Kaleidescape's online services was about 1 minute ago.
Kaleidescape Conductor
Install Kaleidescape Conductor on your Windows PC to copy your Kaleidescape music to your computer and iTunes.
Control Panels
Onscreen Display Control Panel
For controlling the Kaleidescape onscreen display:
Elizabeth's Mini System
Music Zone Control Panels
For controlling music zones without an onscreen display:
Living Room
Patio
Garage

Figure 5-4 Home Page of the User Pages of the Browser Interface

Depending on the selection, the control panel for the onscreen display or music zone appears. Figure 5-5 shows the control panel for a player with an onscreen display. Figure 5-6 shows the control panel for a music zone without an onscreen display.

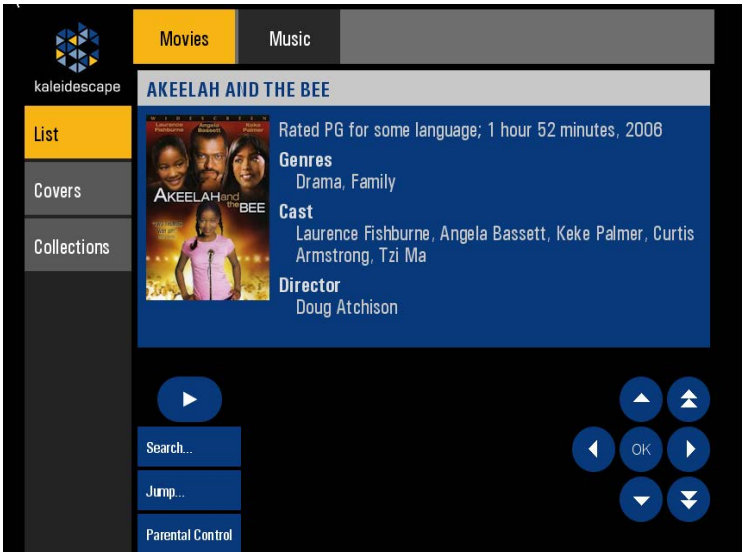


Figure 5-5 Onscreen Display Control Panel

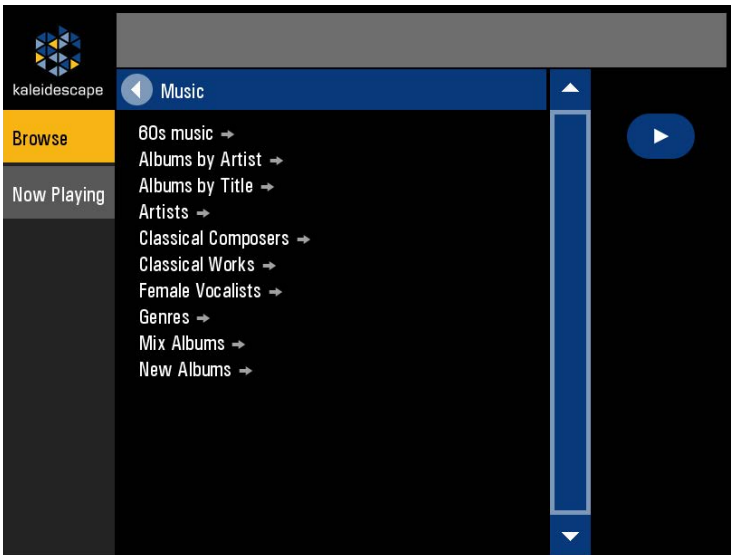


Figure 5-6 Music Zone Control Panel

Web Tablet

Any Windows-based web tablet can be used as a **dedicated** Kaleidescape controller with the **Web Tablet Setup** program.

This program prompts for information, then creates shortcuts on the **Start Menu**. The web tablet now displays the player control panel in full screen mode when turned on.

For more information on web tablet control, go to www.kaleidescape.com/support/control-systems.

Touch Panels

Kaleidescape supports several variations of touch panel control.

- Onscreen Display with Video
- Onscreen Display without Video
- Standalone music control interface for music zones

Onscreen Display with Video

Onscreen Display with Video (OSD Video) displays the Kaleidescape onscreen display on the touch panel, along with other controls, by using a video window on the touch panel. Touching the video display makes selections or navigates menus. OSD Video provides the richest user experience and is the implementation suggested by Kaleidescape whenever possible. See Figure 5-7.

Note: Always use the connection that provides the highest signal quality. Fonts are small and hard to read if using composite video connections.

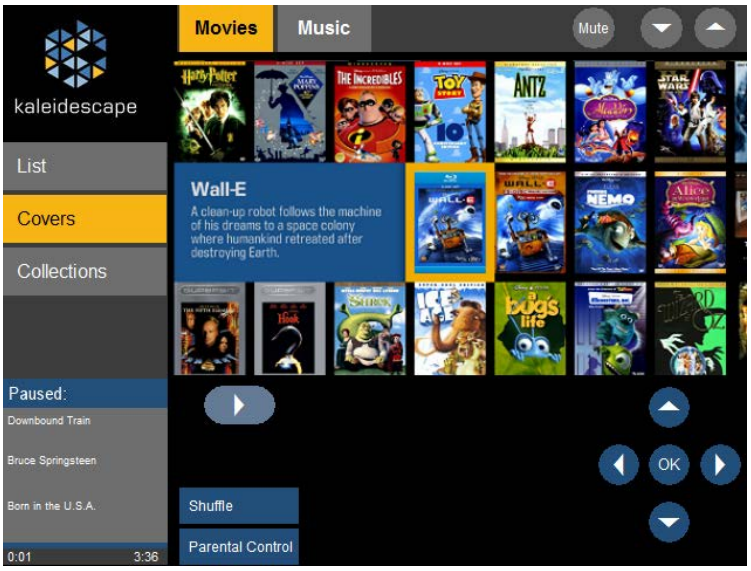


Figure 5-7 Example Onscreen Display with Video

Onscreen Display without Video

Onscreen Display without Video (OSD No Video) provides supplemental information with text-based details for content. The touch panel replicates the details pages for movies or albums while browsing the onscreen display. See Figure 5-8.

Figure 5-8 Example Onscreen Display without Video

Standalone Control for Music Zones

The standalone music control interface for music zones provides text-based music controls on touch panels in rooms without video displays (e.g., hallways). A user can browse and control music playback. See Figure 5-9.

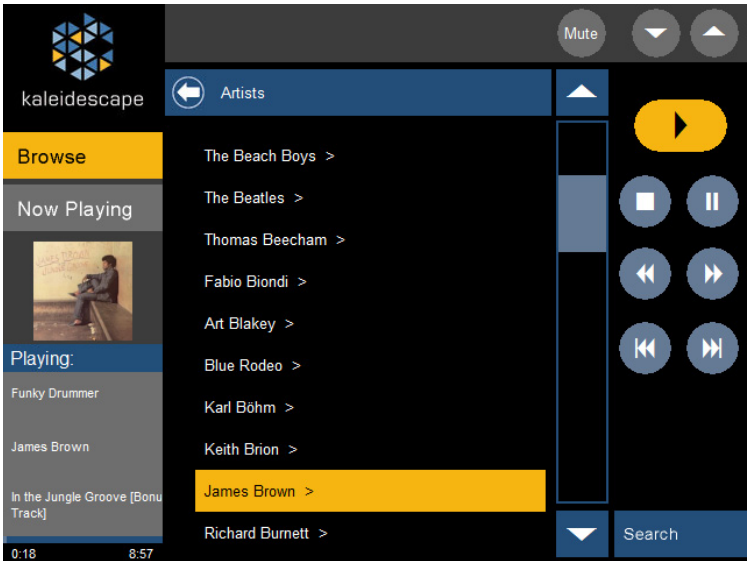


Figure 5-9 Example Music Control Interface

When selecting the touch screen for an installation, consider whether a video display is present and the technical capabilities of the touch panel. Installations can require more than one type of touch panel interface to provide the best control for every zone.

For more information, go to www.kaleidescape.com/support/control-systems.

Keypad Control for Music

In-wall keypads are convenient for music zones that have no video display and no touch panel. There are two types of keypad control.

- **Keypad presets**

  With keypad presets, a keypad can be programmed to play a music selection. Presets can be set to behave like car radio buttons. Press and hold to store, then press to recall.

- **Music collections**

  With music collections, a keypad can be programmed so users can cycle through music selections within a music collection. This interface enables cycling through any collection by using the **NEXT** and **PREVIOUS** buttons.

An installer can program a keypad to control music on a Kaleidescape System as long as the keypad can send a programmer-defined string over RS-232 or TCP/IP. Kaleidescape also provides keypad control modules for several manufacturers that can be downloaded from the Kaleidescape website.

Note: The keypad must be able to send a programmer-defined string. Presets cannot be triggered via IR.

For more information on keypad control commands, refer to the *Kaleidescape System Control Protocol Reference Manual* at www.kaleidescape.com/go/control-protocol.

iPhone or iPod Software Applications

Remotescape Inc., has developed an iPhone and iPod touch application specifically designed to provide remote control for the Kaleidescape System. The **Remotescape** application brings the Kaleidescape Experience to the familiar iPhone interface.

Chapter 6
Troubleshooting

Preparation

The following **tools** are recommended:

- A laptop with an Ethernet port and a serial port
- A router with at least four ports
- At least three tested Cat5e or Cat6 patch cables
- Null modem serial cable

The following equipment is optional, but useful and can save time.

- Kaleidescape Remote
- Blu-ray Disc, DVD and CD
- Portable display
- AC Socket tester

The following information and access can be required to troubleshoot Kaleidescape Systems.

- Serial number of at least one component in the Kaleidescape System, preferably the server
- Access to the back of the Kaleidescape equipment

Troubleshooting Guide

The following tables provide information to troubleshoot most common problems encountered during installation.

Table 1 Troubleshooting Power
Table 2 Troubleshooting Amber Lights
Table 3 Troubleshooting Problems with the Network
Table 4 Troubleshooting Problems with the Browser Interface
Table 5 Troubleshooting Problems with Imports
Table 6 Troubleshooting Problems with Audio & Video
Table 7 Troubleshooting Parental Control
Table 8 Troubleshooting Kaleidescape Conductor

Troubleshooting Power

Problem	Probable Cause	Solution
The front panel does not glow when power is applied.	1. Power source is not turned on or there is a loose power connection.	Check that the power source is turned on and power cables are secure. Verify the socket is live by using a socket tester.
	2. The component is in standby mode.	Use the **ON** button on a remote control to exit standby mode and turn on the player. If a remote is not available, press the **POWER** button on an M500 Player, Music Player, Mini System, 1U Server or 3U Server.
	3. No contact between front panel and chassis.	Clean contacts and reseat the front panel. Press the **POWER** button to verify that the front panel is not defective or that contacts have failed.

Troubleshooting Amber Lights

Problem	Probable Cause	Solution
Front panel glows amber, and the network link and activity status lights are not on.	Component is not connected to network.	• Verify that Ethernet cables are properly terminated. Check that correct connector is used with the cable type (stranded or solid conductor). • Verify that Ethernet cables are connected to a switch. • Check that the switch is turned on and functioning properly.
Disk cartridge blue status light blinks.	This indicates the hot spare in a 3U server.	This is normal operation.
The front panel glows amber, and network link and activity status lights are on.	1. Component network connection is not full-duplex or at least 100Base-TX.	Check that the component is connected to a full-duplex 100Base-TX or 1000Base-T switch. Hubs and half-duplex switches are not supported. If used, expect degraded performance or no playback at all.
	2. Component cannot contact a network DHCP server.	Verify that the network DHCP server is functioning properly.

Problem	Probable Cause	Solution
The front panel glows amber, and network link and activity status lights are on.	3. There are no available DHCP addresses.	Configure the network DHCP server with larger IP address range. Be sure DHCP address pool is large enough and does not overlap devices with static IP addresses.
Disk cartridge status light glows solid amber.	1. Disk cartridge is either not seated properly, latch is sticking, or is failing.	Turn off the server, wait 30 seconds for the drive to spin down, then check for sticking latch and reseat the disk cartridge. Be sure the disk cartridge is completely seated, then turn the server back on. **Note:** If the latch sticks, see article at www.kaleidescape.com/go/latch. If the status light remains amber or unlit after other drives light, the disk cartridge is probably defective and must be replaced. Contact Kaleidescape Support.
	2. Disk cartridge was previously used in another server.	A complete set of disk cartridges can be moved from one server to another server, provided both servers use the same type of disk cartridge and there are enough slots in the destination server for all of the disk cartridges.
	3. Transport disk has completed importing content.	Remove transport disk.
Disk cartridge status light flashing amber.	The hot spare does not have enough capacity to replace at least one of the drives.	Replace the hot spare with a drive with equal or greater capacity than the largest drive in the file system.
Disk cartridge status light does not come on.	Disk cartridge is either not seated properly or is failing.	Turn off the server, wait 30 seconds for the drive to spin down, reseat the disk cartridge, then turn the server back on. If the status light remains unlit after other drives light, contact Kaleidescape Support.
Server front panel alternates between amber and blue.	Network problem.	Contact Kaleidescape Support.

Troubleshooting Problems with the Network

Problem	Probable Cause	Solution
Network status lights are not on.	1. Component has not finished the boot process.	Wait two minutes for component to finish booting. If the component does not boot, contact Kaleidescape Support. Indicators that boot process is complete: • 5U Server - disk cartridge status lights all on • 3U Server - disk cartridge status lights all on and hot spare blinks • 1U Server - disk cartridge status lights all on • Mini System - disk cartridge status lights all on • When booting a server, the disk cartridge status lights come on in a sequential pattern. When the boot completes, the front panel blue glow dims.
	2. Network cable is defective or not connected.	Check cable termination and seating. Check with known good network cable.
	3. Switch port is faulty.	Reboot the switch. Test with a known good switch. Move cable to known good port. A simple router can be a good tool for diagnostics. Use the router and bypass the home network to determine that the Kaleidescape System works correctly. Then proceed with network troubleshooting.
	4. Server is powered off.	Turn server on.
Component does not show up on **COMPONENTS** tab of the browser interface.	1. Component is powered off.	Turn component on.
	2. Network cable is not connected properly.	Check cable termination and seating.
	3. More than one DHCP server is issuing IP addresses.	Verify that there is only one DHCP server on the network.
	4. No DHCP server or no available IP addresses.	Verify there is a DHCP server and that the DHCP server has available IP addresses in the DHCP range. (The DHCP server is usually in the router.)

Problem	Probable Cause	Solution
Component does not show up on **COMPONENTS** tab of the browser interface.	5. Incorrect network settings.	• Make sure all settings are correct. Check the list of Kaleidescape devices by entering **my-kaleidescape/lskd.html** into the browser. This procedure will confirm if the IP address settings are correct. • Network settings might have to be changed through the serial port. Refer to the article at www.kaleidescape.com/go/set-network-settings.
	6. Network divided with VLANs.	Check network settings to make sure all Kaleidescape devices are on the same segment (or VLAN).
	7. Incorrect KEAOS version.	KEAOS 4.0.0 or better is required for M-Class players. **Note:** To find current version, refer to the article at www.kaleidescape.com/go/keaos-version.
	8. Duplicate IP address.	• Check on **DIAGNOSTICS** tab for duplicates. • Change the IP address on the device causing the conflict. This device is very likely newly added to the network. For example, a new print server is added to the network at the same address as a Kaleidescape component.
	9. Components not assigned to the same group.	Verify that components are properly assigned to groups. Open the installer pages of the browser interface and select the **GROUPS** tab, then verify that groups are assigned correctly.
	10. Managed switch configuration.	Verify that ports are set up correctly in the switch configuration.
Onscreen display error message. "This player cannot access your library. Check that all components are running and your network is functioning properly."	1. Insufficient bandwidth for playback	Test by playing back *Kalahari, One Six Right,* or a Blu-ray movie, as this content requires the most bandwidth. Verify that wiring and switch are 1000Base-T.
	2. Faulty switch/router	Fix or replace switch.
	3. Using a hub	Replace hub with 1000Base-T switch.
	4. Bad import	Check to see if playback stops at the same point in a movie every time. If this is the case, delete the movie (use the browser interface to put the movie into the trash can, then delete permanently), and re-import.
	5. Network cable	Check for poor termination.

Problem	Probable Cause	Solution
Server is offline/not communicating with Kaleidescape.	1. Internet connection is down.	Contact the Internet service provider.
	2. Incorrect DNS	Change to a valid DNS server.
	3. MTU (Maximum Transmission Unit) size	This setting can usually be changed in the router.
	4. Incorrect or missing network settings (default gateway, subnet mask, DNS servers)	Use DHCP reservations instead of static IP address, or connect a laptop wired to the same cable as the server and verify the laptop can access the Internet. Get the network settings for the laptop using the **ipconfig** command in the command prompt screen (**Start, Run, Command**). Use the default gateway, subnet mask, and DNS servers listed for the Kaleidescape server on the **COMPONENTS** page of the browser interface. If using a Mac, use **ifconfig** in a terminal window.
	5. Server not powered on.	Power on the server. If the server does not appear to be booting, retrieve diagnostic information from the server and send to support@kaleidescape.com. Refer to the Quick Reference Guide at www.kaleidescape.com/go/diagnostic-info.
	6. Server cannot boot.	Retrieve diagnostic information from the server and send to support@kaleidescape.com. Refer to the Quick Reference Guide at www.kaleidescape.com/go/diagnostic-info.
	7. Router is faulty or powered off.	If the router is powered on, try resetting. If the router comes on, but the problem reappears frequently, the router should be replaced.
Connection is half-duplex.	1. Hub used	Replace hub with 1000Base-T switch.
	2. Using incorrect network cable	Check that Cat5e or Cat6 cables are used for all network connectors.
	3. Switch is set up incorrectly.	If the switch is managed, verify that all ports are set to allow for a 100Base-TX/1000Base-T full-duplex connection.
100Base-TX connection established between 1000Base-T components.	Not all pairs were used when terminating the Cat5e/Cat6 cable.	Terminate using all eight wires. A 1000Base-T connection requires that all 4 pairs be terminated.

Problem	Probable Cause	Solution
Duplicate IP address **Note:** Check **DIAGNOSTICS** tab to identify duplicates.	1. The static IP address assigned is within the DHCP range.	Either change the DHCP range on the DHCP server (usually the router), or change the static IP address to be outside the range. Be careful not to set IP address to the same IP address as another static device.
	2. Two DHCP servers on the same network.	Eliminate one of the DHCP servers or consult an IT professional to ensure the network is configured properly.
	3. Two devices assigned the same static IP address.	Change the IP address on the device causing the conflict. This device is very likely newly added to the network.
Cannot resolve hostnames with DNS.	1. Incorrect DNS setting	Change DNS setting to a known good setting.
	2. DNS server is not resolving correctly.	Change DNS setting to a known good setting.
Disc menu does not recognize the player connection to the Internet when trying to use BD-Live.	Network setting	Open the browser interface, select the **COMPONENTS** tab, click the **SETTINGS** button for the M-Class player, select the **NETWORK** tab. Verify that **ALLOW INTERNET ACCESS** is selected. If a static IP address is set, verify the default gateway, subnet mask, and DNS servers.

Troubleshooting Problems with the Browser Interface

Problem	Probable Cause	Solution
Cannot access the browser interface.	1. Server is not powered on.	Verify that the server is powered on.
	2. Not using the correct access URL for a Mac.	For Mac, use http://my-kaleidescape.local or http://my-kaleidescape.local/installer or **ks-** followed by the server twelve-digit serial number; for example, http://ks-00001000040b.local/installer or use the IP address of the server found on the **System Summary** page on the onscreen display. **Note:** If browser interface still does not appear, see Accessing the Browser Interface on page 63.
	3. The network connection is failing for the computer or server.	Check network connections for the computer and the server. Connect a laptop to each cable and open a different web page (so page is not loaded from cache). If the page fails to load, troubleshoot the network.
	4. Network is set up so that System URL on the Kaleidescape browser interface cannot be opened.	Refer to Network Requirements on page 156 for instructions on checking and updating computer network settings to allow the web browser access to a Kaleidescape system. or Use the IP address of the server found on the **System Summary** page on the onscreen display.
	5. Server connected to a router that hides the server from the PC.	Use a switch to connect the server to the site network, or connect the PC to the router.
When trying to access the browser interface, redirected to Kaleidescape website or get 404 error.	NetBIOS is required to view the URL http://my-kaleidescape but is frequently blocked by firewalls and other protective software.	Use the IP address of the server as address for the browser interface. For example, if the server IP address is **172.16.31.1**, access the browser interface at **http://172.16.31.1**. The simplest method to get the current IP address of the server is look at the **System Summary** on the onscreen display. If using DHCP, this IP address can change over time. See Network Requirements on page 156.

Problem	Probable Cause	Solution
Information in browser interface does not match the system.	1. Multiple Kaleidescape Systems are set up on the local network and using the same System URL.	Use address http://ks-[server_serial_number]/installer to open the installer pages of the browser interface, select the **PREFERENCES** tab to change the System URL. **Note:** If NetBIOS does not resolve, use the server IP address.
	2. Components are not powered on and therefore do not appear on browser interface.	Check power and connectivity.
	3. There are multiple Kaleidescape servers and groups are assigned incorrectly.	Verify the group assignments on the **GROUPS** tab on the browser interface.
Control panels in the browser interface do not control the player.	Latest version of Java is not installed.	Enable Java in the web browser or go to www.java.com to download the latest version. The download process verifies that Java is running and installed before updating.
Browser interface is running slowly.	Mismatched IP addresses	Open the **COMPONENTS** tab in the browser interface, click the **SETTINGS** button for the component, select **NETWORK** tab and make settings changes, then reboot the applicable component. Browser interface will load slowly until the change takes place; however, loading http://my-kaleidescape/lskd.html will not be slow. Use this page to verify the settings of each Kaleidescape components.

Troubleshooting Problems with Imports

Problem	Probable Cause	Solution
CD, DVD or Blu-ray Disc fails to import (possibly ejecting).	1. Disc is not a CD, DVD or Blu-ray Disc, contains computer data, or was inserted with label down. **IMPORT** tab message: "Disc is not a DVD or music CD"	Verify that the disc is a movie or album and is face up in the tray.
	2. Disc has already been imported **IMPORT** tab message: "Disc already imported"	Movie or album has already been imported. If not on the list view, check the trash can and parental control settings.
	3. Disc is dirty, scratched, or flawed. **IMPORT** tab message: "Problem reading disc"	Check the disc for surface defects and clean if necessary. • Clean disc by wiping from the center of the disc outward. Do NOT wipe around the surface in a circular motion. • Try another copy of the movie or album.
	4. Server has a failed disk drive or is rebuilding the disk array. Imports are disabled during a rebuild.	• Check the browser interface to see if a disk is rebuilding. • A rebuild can take 24–48 hours depending on the amount of content on the drive. Confirm that the browser interface does not show that a drive is rebuilding or a drive is missing or failed, then try importing content.
	5. Disc import is disabled for a player.	Open the **COMPONENTS** tab in the browser interface. Change the **Import** setting to allow imports.
	6. System is not licensed for both movies and music.	Contact Kaleidescape Support for movie and music license information.
	7. Server is full.	Go to the **HOME** page of the browser interface or **System Summary** on the onscreen display to check available capacity of the server.
	8. Drive failure.	Contact Kaleidescape Support.

Problem	Probable Cause	Solution
CD, DVD or Blu-ray Disc fails to import (possibly ejecting).	9. Disc is poorly authored.	• Use the Kaleidescape loan process to send the disc for processing. For more information go to www.kaleidescape.com/loan. • See list of poorly authored DVDs at www.kaleidescape.com/go/poorly-authored-dvds.
	10. Disc cannot be imported. **IMPORT** tab message: "DVD/Blu-ray Disc cannot be imported"	Use the Kaleidescape loan process to send the disc for processing. For more information go to www.kaleidescape.com/loan.
	11. Server restarted **IMPORT** tab message: "System restarted during import"	Try importing again.
	12. DVD region does not match the region setting of the player. **IMPORT** tab message: "Disc is a region xx DVD"	Change DVD region setting for the player. Open the **COMPONENTS** tab in the browser interface, click the **SETTINGS** button for the player, select the **REGIONS** tab, and make region settings change to match the region on the DVD. **Region Setting Can Only Be Changed 4 Times.** **Note:** If content from two regions is imported frequently, use two players, each set to a different region. The TV must support the output format of the disc to play the content, PAL or NTSC. (Blu-ray Discs for any region can be imported with any player; however only discs from the region that matches the player can be played. This is the opposite from DVD. With DVD, the region code must match the player to import a DVD. Once imported, the disc can be played from any player, regardless of the region code.)
	13. Blu-ray Disc is not encrypted.	M-Class players can play but cannot import non-AACS content at this time.
	14. Blu-ray Disc contains AVCHD content.	M-Class players cannot play AVCHD content at this time.
	15. User ejected the disc. **IMPORT** tab message: "Eject button pressed"	Some imports take a long time because of the authoring method. Try importing again and leave in the tray until import is complete.

Problem	Probable Cause	Solution
DVD import takes longer than about 30 minutes per disc or Blu-ray Disc takes longer than about 60 minutes per disc (average speed).	1. Network fault between player and server.	Verify there are no network disconnects or faulty Ethernet cables and slow switches, and that the network is active.
	2. DVD is poorly authored.	These DVDs can take several hours to import. Do not eject the disc until the import is complete. If ejected prematurely, all import progress is lost.
	3. Disc is dirty, scratched, or flawed. **IMPORT** tab message: "Problem reading disc"	Check the disc for surface defects and clean if necessary. • Clean disc by wiping from the center of the disc outward. Do NOT wipe around the surface in a circular motion. • Try another copy of the movie or album.
	4. Too much network traffic.	• If the server network connection is operating at 100Base-TX, stop movie playback from some players or stop importing some DVDs. • Put the M-Class player and server on a 1000Base-T network to improve Blu-ray import speed.
Import fails with a Bulk Loader or Speed Reader.	1. Bulk Loader does not support the disc format.	Try the disc in a different Kaleidescape component.
	2. Changer must be reset.	Reset the changer. See the article at www.kaleidescape.com/go/reset-bulk-loader.
	3. Import stopped after an hour on the Speed Reader. **IMPORT** tab message: "Import skipped after 1 hour"	Disc was poorly authored. Try importing again with the timeout set to 6 hours, or try importing with a different Kaleidescape component.

Troubleshooting Problems with Audio & Video

Problem	Probable Cause	Solution
No audio	1. Audio cables loose or disconnected.	Check audio cable connections and terminations.
	2. Wrong audio source selected	Verify that the audio system is set to play Kaleidescape audio.
	3. Playing back a DTS audio track with a non-M-Class player while using the stereo analog outputs or HDMI	• Use one of the multichannel audio outputs (optical, coaxial, or HDMI connected to multichannel receiver) If using HDMI and connected to multichannel receiver, set HDMI audio output preference to **MULTICHANNEL**. • Or set the preferred audio track to something other than the DTS. Open the **COMPONENTS** tab in the browser interface, click the **SETTINGS** button for the component, select the **AUDIO** tab, and make audio settings changes.
	4. Error in the control system programming	If using a controller with the Kaleidescape system, check controller programming and connections.
	5. Home-authored content	Some home-authored content can contain video but no audio. Refer to the article at www.kaleidescape.com/go/home-movies.
	6. Using optical, coaxial, or analog output for an M-Class player when playing a movie, and **HDMI audio decode mode** is set to **BITSTREAM-PASSTHROUGH**	• Open the **COMPONENTS** tab in the browser interface, click the **SETTINGS** button for the M-Class player, select the **AUDIO** tab, and set the **HDMI audio decode mode** to **PLAYER DECODE**. • Listen to audio through the HDMI connection.
No audio in multiple zones	1. Zones not set correctly	Verify that the zone to be controlled is the zone that is actually being controlled.
	2. Using optical coax, or analog output of an M-Class player when playing a movie and **HDMI audio decode mode** is set to **BITSTREAM-PASSTHROUGH**	• Open the **COMPONENTS** tab in the browser interface, click the **SETTINGS** button for the player, select the **AUDIO** tab, and set the **HDMI audio decode mode** to **PLAYER DECODE**. • Listen to audio through the HDMI connection.

Problem	Probable Cause	Solution
Audio level for movies too low	Setting for number of audio channels is incorrect	If using two speakers with an M-Class player, set the number of audio channels to two channels. Open the **COMPONENTS** tab in the browser interface, click the **SETTINGS** button for the player, select the **AUDIO** tab, and make **AUDIO** settings changes.
No video	1. Video cables are loose or disconnected	Check video cable connections. HDMI cables and related components are a common source of problems. Use known good display to verify the cable connection and signal from the player.
	2. Display does not support current player output.	Check the video modes supported by the display. Open the **COMPONENTS** tab in the browser interface, click the **SETTINGS** button for the component, select the **VIDEO** tab, and make **VIDEO** settings changes to a supported video mode.
	3. Static IP on player does not match the IP range of the server.	A player set to a static IP address can have a blue glow indicating the player is on the same network as the server but can be on a different subnet. Refer to article at www.kaleidescape.com/go/link-local.
	4. Onscreen display but no video playback	Test the *Kalahari* HD movie playback. This film is HD but has no HDCP protection. If Kalahari plays back, then the problem is an HDCP issue. The Kaleidescape player likely cannot communicate with the display to verify that content playback is allowed. See the article at www.kaleidescape.com/go/troubleshooting-video.
	5. Home-authored content	Home-authored content which does not follow Kaleidescape guidelines might import but can fail to play back. Refer to the article at www.kaleidescape.com/go/home-movies.
	6. Player is not on the network or not making a connection with the server.	There is no video from a non-M-Class player without a network connection to the server. Follow the troubleshooting steps above. Use known good display to verify the cable connection and the signal from the player.
	7. Wrong source selected.	Verify the source setting is correct on the display, switcher, A/V receiver, or A/V processor.

Problem	Probable Cause	Solution
Video appears distorted or compressed.	Display aspect ratio not set properly	Stop playback. • Open the **COMPONENTS** tab in the browser interface, click the **SETTINGS** button for the component, select the **VIDEO** tab, and check the media format playback options. • Check the aspect ratio settings on the display device or scaler.
Video stalls or stutters.	1. Fault in network path between player and server **Note:** Does not apply to a Mini System with no external players.	Verify there are no network disconnects or faulty Ethernet cables and slow switches, and that the network is active.
	2. Too much network traffic on a 100Base-TX network	A Kaleidescape server supports simultaneous DVD playback for up to seven players **or** import for up to three DVDs on a 100Base-TX Ethernet connection. Only one Blu-ray movie can be played from a server using a 100Base-TX connection. Turn off some players, or stop importing some movies, or connect the server to a 1000Base-T Ethernet connection (cable and switch).
	3. HDMI handshake problem	Verify integrity of cables and check connections. Bypass any switchers, baluns, A/V receivers, or A/V processors, and go directly to display. A good test is to connect directly to a known good display and verify stalling does not occur.

Troubleshooting Parental Control

Problem	Probable Cause	Solution
Movies are missing from display.	Parental control is active.	Check the default parental control level of the player. If the player is set to an undesired level this problem will continue until this setting is changed. Change to appropriate level. Enter a passcode if necessary.
	Movie is in the trash can.	Open the **MOVIES** tab in the browser interface and remove movie from the trash can.

Cannot enter the passcode.	Remote is not programmed correctly.	Program the remote correctly. Kaleidescape components can be programmed with IR codes for a standard Toshiba or Kenwood DVD player.
Numeric keypad is not showing up on the touch panel.	Keypad was not added to the template.	Add keypad to the touch panel template.
Parental control is not working on a specific player.	Default level is set incorrectly for that player.	Check the **PARENTAL CONTROL** tab on the browser interface to verify that the player is set to the correct level. If **AUTOMATIC SAFE LEVEL** is selected, the default rating will be displayed in the paragraph on the bottom right of the page.
After entering the passcode, movies are still missing.	1. Wrong passcode	Try again. **Note:** A forgotten passcode can be changed on the **PARENTAL CONTROL** tab without knowing the old passcode.
	2. Time out exceeded	Enter the passcode again or extend the timeout on the browser interface.
Parental control menu in onscreen user interface does not list restricted content.	Restricted content is selected to be hidden.	Enter the passcode from any screen on the onscreen display even if the option is not visible.
Cannot determine rating for a movie to make sure the movie is hidden for certain ratings.	Movie is unrecognized and does not have the correct rating.	Temporary solution is edit the rating manually from the **MOVIES** tab. Permanent solution is to use the Kaleidescape loan process, see www.kaleidescape.com/loan.
Cannot block adult content.	Confusion with how to set up just two levels of parental control when four levels are available.	1. Open the **PARENTAL CONTROLS** tab on the browser interface. 2. Set a passcode for **Restricted content** and set the rating to all movies. 3. Next set the rating for **The main library** to the acceptable movie rating for the whole family. 4. Click **OK**. If the players are set to **Automatic Safe Level**, this procedure works for a simple two-level configuration.

Troubleshooting Kaleidescape Conductor

Problem	Probable Cause	Solution
Conductor does not connect.	1. Computer name is too long.	Check computer properties and verify that the computer name is 14 characters or less. Change the name if necessary.
	2. NetBIOS problem.	• See Network Requirements on page 156. • Contact Kaleidescape Support.
Conductor does not work on the Mac.	This configuration is not supported.	Conductor is not supported on a Mac. However a Windows emulator such as Parallels Desktop can be used. If an emulator is used, the Windows version of iTunes must be installed because Conductor does not sync with the Mac version.
Cannot sync Conductor on a VLAN through a second router.	Computer uses NetBIOS and NetBIOS does not work across VLANs.	Connect computer to the same LAN as the server.

Appendix A
Product Specifications

Kaleidescape 1U Server, Model KSERVER-1500

Dimensions:

17.5 in. × 1.7 in. × 18.8 in. (W × H × D)
(44.5 cm × 4.3 cm × 47.8 cm)

- 1 rack unit
- Front panel protrudes 1 in. (2.5 cm)

Weight:

- 15.0 lbs (6.8 kg) with no disk cartridges installed
- 24.0 lbs (10.9 kg) with four 2 TB Disk Cartridges installed

Disk Cartridges

- KDISK-2000-L: 2.2 lbs (1.0 kg)
- KDISK-BLANK-L: 0.35 lbs (0.16 kg)
- KDISK-1000-L: 2.0 lbs (0.9 kg)
- KDISK-750-L: 2.0 lbs (0.9 kg)
- KDISK-250-L: 2.0 lbs (0.9 kg)

Power:

- 100–240 V, 50–60 Hz, universal input
- 66 W typical (86 W max) consumption with four 2 TB Disk Cartridges installed
- 72 W typical (112 W max) consumption with four 250 GB, 750 GB or 1 TB Disk Cartridges installed

Environment:

Operating temperature:
41°F to 86°F (5°C to 30°C)

Storage temperature:
-4°F to 140°F (-20°C to 60°C)

Relative humidity:
5% to 90% non-condensing

Maximum operating altitude:
10,000 ft (3000 m)

Heat output:

- 2 TB Disk Cartridges 290 BTU/hr (86 W)
  250 GB, 750 GB or 1 TB Disk Cartridges
  382 BTU/hr (112 W)

Airflow: 10 CFM (17 m^3/hr) min

Ventilation:

- Minimum 1 in. (2.5 cm) ventilation space at the front
- Minimum 2 in. (5 cm) ventilation space at the rear

Note: Make sure rack or other doors do not reduce the 1 in. (2.5 cm) air space required at the front of the chassis.

Storage:

- One 2 TB Disk Cartridge for data protection (RAID-K parity)
- Each additional 2 TB Disk Cartridge stores 50 Blu-ray Discs, 300 DVDs, or 3,300 CDs
- Expandable to four 2 TB Disk Cartridges for a maximum of 6 TB data storage
  (150 Blu-ray Discs or 900 DVDs)
- More servers can be added to provide thousands of movies and albums in one library

Bandwidth:

- Serves DVD movies or music to up to 45 zones simultaneously
- Serves Blu-ray movies to up to 5 zones simultaneously
- 4 simultaneous imports

Connections:

- 100Base-TX/1000Base-T Ethernet (RJ45)
- RS-232 for control systems (DB-9 male)
- Two USB 2.0 (reserved)

Certifications:

- CSA (IEC 60950-1:2001, CSA 60950-1-03)
- FCC Class B
- GOST R
- CE
- RoHS compliant

Kaleidescape 3U Server, Model KSERVER-5000

Dimensions:

17.5 in. × 5.2 in. × 19.3 in. (W × H × D)
(44.5 cm × 13.2 cm × 49.0 cm)

- 3 rack units
- Front panel protrudes 1.1 in. (2.8 cm)

Weight:

- 29.0 lbs (13.2 kg) with no disk cartridges installed
- 59.0 lbs (26.8 kg) with fourteen 2 TB Disk Cartridges installed

Disk Cartridges

- KDISK-2000-L: 2.2 lbs (1.0 kg)
- KDISK-BLANK-L: 0.35 lbs (0.16 kg)
- KDISK-1000-L: 2.0 lbs (0.9 kg)
- KDISK-750-L: 2.0 lbs (0.9 kg)
- KDISK-250-L: 2.0 lbs (0.9 kg)

Power:

- 100–240 V, 50–60 Hz, universal input
- 183 W typical (205 W max) consumption with fourteen 2 TB Disk Cartridges installed
- 199 W typical (270 W max) consumption with fourteen 750 GB or 1 TB Disk Cartridges installed

Environment:

Operating temperature:
41°F to 86°F (5°C to 30°C)

Storage temperature:
-4°F to 140°F (-20°C to 60°C)

Relative humidity:
5% to 90% non-condensing

Maximum operating altitude:
10,000 ft (3000 m)

Heat output:

- 750 GB or 1 TB Disk Cartridges
  921 BTU/hr (270 W)
- 2 TB Disk Cartridges
  700 BTU/hr (205 W)

Airflow: 40 CFM (68 m^3/hr) min

Ventilation:

- Minimum 1 in. (2.5 cm) ventilation space at the front
- Minimum 2 in. (5 cm) ventilation space at the rear

Note: Make sure rack or other doors do not reduce the 1 in. (2.5 cm) air space required at the front of the chassis.

Storage:

- Two 2 TB disk cartridges for data protection (RAID-K parity and hot spare)
- Each additional 1 TB disk cartridge stores 25 Blu-ray Discs, 150 DVDs, or 1,650 CDs
- Each additional 2 TB disk cartridge stores 50 Blu-ray Discs, 300 DVDs, or 3,300 CDs
- Expandable to fourteen 2 TB Disk Cartridges for a maximum of 24 TB data storage (600 Blu-ray Discs or 3,600 DVDs)
- More servers can be added to store thousands of movies and albums in one library

Bandwidth:

- Serves DVD movies or music to up to 45 zones simultaneously
- Serves Blu-ray movies to up to 5 zones simultaneously
- 4 simultaneous imports

Connections:

- 100Base-TX/1000Base-T Ethernet (RJ45)
- RS-232 control port (DB-9 male)
- Two USB 2.0 (reserved)
- IEEE 1394 (FireWire) 6-pin (reserved)

Certifications:

- CSA (IEC 60950-1:2001, CSA 60950-1-03)
- FCC Class B
- GOST R
- CE
- RoHS compliant

Kaleidescape M500 Player, Model KPLAYER-M500

Dimensions:

17.5 in. × 1.7 in. × 13.8 in. (W × H × D)
(44.5 cm × 4.3 cm × 35.0 cm) without side panels

- 1 rack unit
- Front panel protrudes 1 in. (2.5 cm)

Weight:

10.0 lbs (4.6 kg)

Power:

- 100–240 V, 50–60 Hz, universal input
- 36 W typical consumption
  (27 W standby, 42 W max)

Environment:

Operating temperature:
41°F to 95°F (5°C to 35°C)

Storage temperature:
-4°F to 140°F (-20°C to 60°C)

Relative humidity:
5% to 90% non-condensing

Maximum operating altitude:
10,000 ft (3000 m)

Heat output: 143 BTU/hr (42 W) max

Airflow: 7 CFM (12 m^3/hr) min

Ventilation:

- Minimum 1 in. (2.5 cm) ventilation space at the front
- Minimum 2 in. (5 cm) ventilation space at the rear

Note: Make sure that the air space required at the front of the chassis is maintained.

Network:

100Base-TX/1000Base-T Ethernet
(RJ45 connector)

Control Connections:

- Front panel IR receiver window
- IR input (1/8 in. mini-plug)
- RS-232 control port (DB-9 male)

Video Outputs:

- HDMI
- Component YP_bP_r (RCA connectors)
- S-Video
- Composite (RCA connector)

Video Modes:

1080p60/50/24, 1080i60/50, 720p60/50, 576p, 576i, 480p, 480i

Audio Outputs:

- HDMI
- Digital coaxial (RCA connector)
- Digital optical (TosLink connector)
- Analog stereo (RCA connectors)

Audio Formats:

- Dolby Digital, Dolby TrueHD
- DTS Digital Surround, DTS-HD Master Audio
- MPEG Audio
- PCM

Disc Media:

CD Audio, CD-R, CD-RW, DVD, DVD-R, DVD-RW, DVD+R, DVD+RW, DualDisc, BD-ROM, BD-R, BD-RE

Blu-ray Disc:

- 1080p/24
- Dolby TrueHD
- DTS-HD Master Audio
- BD-Live
- Profile 2.0

Region Codes:

DVD region code can be changed up to four times

Blu-ray region code cannot be changed by user

KPLAYER-M500-A (region A)

KPLAYER-M500-B (region B)

Certifications:

- CSA (IEC 60950-1:2001, CSA 60950-1-03)
- FCC Class B
- GOST R
- CE
- RoHS compliant

Kaleidescape M300 Player, Model KPLAYER-M300

Dimensions:

8.4 in. × 1.7 in. × 10.6 in. (W × H × D)
(21.3 cm × 4.3 cm × 26.9 cm)

Note: Optional rack-mount shelf is available to hold two M300 Players in one rack unit

Weight:

- 3.0 lbs (1.4 kg) includes 1 lb (0.5 kg) power supply
- Rack-mount shelf: 0.5 lbs (0.2 kg)

Power:

- 100–240 V, 50–60 Hz, universal input
- 28 W typical consumption
  (20 W standby, 28 W max)

Environment:

Operating temperature:
41°F to 95°F (5°C to 35°C)

Storage temperature:
-4°F to 140°F (-20°C to 60°C)

Relative humidity:
5% to 90% non-condensing

Maximum operating altitude:
10,000 ft (3000 m)

Heat output: 96 BTU/hr (28 W) max

Airflow: 6 CFM (10 m^3/hr) min

Ventilation:

- Minimum 1 in. (2.5 cm) ventilation space at the front
- Minimum 2 in. (5 cm) ventilation space at the rear

Network:

100Base-TX/1000Base-T Ethernet
(RJ45 connector)

Control Connections:

- Front panel IR receiver window
- IR input (1/8 in. mini-plug)

Video Outputs:

- HDMI
- Component YP_bP_r (RCA connectors)
- Composite (RCA connector)

Video Modes:

1080p60/50/24, 1080i60/50, 720p60/50, 576p, 576i, 480p, 480i

Audio Outputs:

- HDMI
- Digital coaxial (RCA connector)
- Analog stereo (RCA connectors)

Audio Formats:

- Dolby Digital, Dolby TrueHD
- DTS Digital Surround, DTS-HD Master Audio
- MPEG Audio
- PCM

Blu-ray Disc:

- 1080p/24
- Dolby TrueHD
- DTS-HD Master Audio
- BD-Live
- Profile 2.0

Region Codes:

Blu-ray region code cannot be changed by user

- KPLAYER-M300-A (region A)
- KPLAYER-M300-B (region B)

Certifications:

- CSA (IEC 60950-1:2001, CSA 60950-1-03)
- FCC Class B
- GOST R
- CE
- RoHS compliant

Kaleidescape Music Player, Model KMUSIC-4000

Dimensions:

17.5 in. × 1.7 in. × 13.8 in. (W × H × D)
(44.5 cm × 4.3 cm × 35.0 cm)

- 1 rack unit
- Front panel protrudes 1 in. (2.5 cm)

Weight:

10.0 lbs (4.6 kg)

Power:

- 100–240 V, 50–60 Hz, universal input
- 14 W typical consumption
  (14 W standby, 20 W max)

Environment:

Operating temperature:
41°F to 95°F (5°C to 35°C)

Storage temperature:
-4°F to 140°F (-20°C to 60°C)

Relative humidity:
5% to 90% non-condensing

Maximum operating altitude:
10,000 ft (3000 m)

Heat output: 70 BTU/hour (20 W) max

Airflow: 2.5 CFM (4.2 m^3/hr) min

Ventilation:

- Minimum 1 in. (2.5 cm) ventilation space at the front
- Minimum 2 in. (5 cm) ventilation space at the rear

Note: Make sure rack or other doors do not reduce the 1 in. (2.5 cm) air space required at the front of the chassis.

Network:

100Base-TX Ethernet (RJ45 connector)

Control Connection:

RS-232 control port (DB-9 male)

Audio Outputs:

Four simultaneous independent audio zones

- Four digital coaxial (RCA connectors)
- Four digital optical (TosLink connectors)
- Four analog stereo (RCA connectors)

Audio Formats:

PCM

Disc Media:

CD Audio, CD-R, CD-RW, DVD, DVD-R, DVD-RW, DVD+R, DVD+RW, DualDisc

Certifications:

- CSA (IEC 60950-1:2001, CSA 60950-1-03)
- FCC Class B
- GOST R
- CE
- RoHS compliant

Kaleidescape Mini System, Model KSYSTEM-120

Dimensions:

- With side panels
  17.8 in. × 3.3 in. × 17.3 in. (W × H × D)
  (45.1 cm × 8.4 cm × 43.9 cm)
- Without side panels
  16.0 in. × 3.3 in. × 17.3 in. (W × H × D)
  (40.6 cm × 8.4 cm × 43.9 cm)
- With rack-mount kit (2 rack units)
  16.0 in. × 3.5 in. × 17.3 in. (W × H × D)
  (40.6 cm × 8.9 cm × 43.9 cm)

Weight:

- 20.0 lbs (9.1 kg) without Mini Disk Cartridges installed
- 24.0 lbs (10.9 kg) with four Mini Disk Cartridges installed

Disk Cartridges

- KDISK-500-M: 0.7 lbs (0.3 kg)
- KDISK-BLANK-M: 0.4 lbs (0.2 kg)

Power:

- 100–240 V, 50–60 Hz, universal input
- 85 W typical (74 W standby, 90 W max) consumption with four 500 GB Mini Disk Cartridges

Environment:

Operating temperature:
41°F to 95°F (5°C to 35°C)

Storage temperature:
-4°F to 140°F (-20°C to 60°C)

Relative humidity: 5% to 90% non-condensing

Maximum operating altitude:
10,000 ft (3000 m)

Heat output: 308 BTU/hour (90 W) max

Airflow: 15 CFM (26 m^3/hr) min

Ventilation:

- Minimum 1 in. (2.5 cm) ventilation space at the front
- Minimum 2 in. (5 cm) ventilation space at the rear

Note: Make sure rack or other doors do not reduce the 1 in. (2.5 cm) air space required at the front of the chassis.

Storage:

- One 500 GB Mini Disk Cartridge for data protection (RAID-K parity)
- Each additional 500 GB Mini Disk Cartridge stores 75 DVDs or 825 CDs
- Expandable to four Mini Disk Cartridges for a maximum of 1.5 TB data storage (225 DVDs)
- Multiple Mini Systems and servers can be grouped seamlessly to provide storage for thousands of movies and albums

Bandwidth:

- Serves DVD movies or music to up to 15 zones simultaneously
- 4 simultaneous imports

Video Outputs:

- HDMI
- Component YP_bP_r (RCA connectors)
- S-Video
- Composite (RCA connector)

Video Modes:

- High definition 720p, 1080i and 1080p at 50/60 Hz
- NTSC 480i, 480p
- PAL 576i, 576p
- Best resolution selected automatically through HDMI

Audio Outputs:

Zone 1

- HDMI
- Digital coaxial (RCA connector)
- Digital optical (TosLink connector)
- Analog stereo (RCA connectors)

Zones 2 and 3

- Analog stereo (RCA connectors)

Audio Formats:

- Dolby Digital
- DTS
- MPEG Audio
- PCM

Disc Media:

CD Audio, CD-R, CD-RW, DVD, DVD-R, DVD-RW, DVD+R, DVD+RW, DualDisc

Connections:

- 100Base-TX/1000Base-T Ethernet (RJ45)
- Front panel IR receiver window
- IR input (1/8 in. mini-plug)
- RS-232 control port (DB-9 male)

Certifications:

- CSA (IEC 60950-1:2001, CSA 60950-1-03)
- FCC Class B
- GOST R
- CE
- RoHS compliant

Appendix B
Notices

Compliance

FCC Notice

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment to a different outlet or circuit than the one to which the receiver is connected
- Consult a dealer or an experienced radio/TV technician for help

CE Declaration

The KSERVER-1500, KSERVER-5000, KPLAYER-M500, KPLAYER-M300, KMUSIC-4000, and KSYSTEM-120 carry the mark. These products have been tested and conform to the European Union 2004/108/EC directive and the 2006/95/EC Low Voltage Directive.

These products are shipped with a formal Declaration of Conformity.

WEEE Notice

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netinet/in.h

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net/if.h

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arpa/inet.h

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netdb.h

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Message	Cinavia Message Code
Cinavia stopped playback.	1
Cinavia muted the audio.	3

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Appendix C
Network Requirements

This appendix provides information on designing, troubleshooting and optimizing Ethernet networks used with Kaleidescape movie servers.

The Browser Interface

The browser interface is used to view and edit information about movies and music and configure a system.

For Windows

Use the following procedure to open the browser interface using Windows.

1. Open a web browser and enter http://my-kaleidescape.

If the browser interface does not appear or is slow to appear, go to the next step.

2. Enter the browser interface IP address in the web browser.
    a. Press the **MENU** button on a remote control.
    b. Use the arrow buttons to select **System**.
    c. Select **System Summary** to see the browser interface (Web utility) IP address.
    d. Enter the **Web utility IP address** in the web browser.

If access to the onscreen display of a Kaleidescape player is not readily available, or to avoid checking the IP address every time to access the browser interface, use the following procedure.

3. Enter http://my-kaleidescape.local.

If the browser interface does not appear or is slow to appear, go to the next step.

4. If Kaleidescape Conductor is installed on the computer, right-click the Kaleidescape icon in the notification area of the task bar (system tray). Then select **Manage Kaleidescape System...** from the pop-up menu.

If the browser interface does not appear or is slow to appear, go to the next step.

5. Install **Bonjour** for Windows. Go to the Bonjour download page and click the **DOWNLOAD** button.
6. Enter http://my-kaleidescape.local again.

For Mac

Use the following procedure to open the browser interface using a Mac.

1. Open a web browser and enter http://my-kaleidescape.local.

If the browser interface does not appear or is slow to appear, go to the next step.

2. Enter the browser interface IP address in the web browser.
   a. Press the **MENU** button on a remote control.
   b. Use the arrow buttons to select **System**.
   c. Select **System Summary** to see the browser interface IP address.
   d. Enter the browser interface IP address in the web browser.

Special Cases

Under special conditions, other methods are used to access the browser interface.

- Using a link local address when the server has an unknown static IP address
- Using a serial number when more than one Kaleidescape System is on the same network

Link Local Address

The link local address method is used in extreme cases under the following conditions:

- The server has an unknown static IP address.
- The server is on a different subnet than the computer.

(Using the link local address is a somewhat complicated procedure requiring setting the computer to a static IP in the 169.254.xxx.xxx range).

For detailed instructions on using the link local address, see Knowledge Base article at www.kaleidescape.com/go/link-local.

Server Serial Numbers

When more than one Kaleidescape System is on the same network, using http://my-kaleidescape accesses one of the servers.

To open the browser interface for a specific server, enter http://ks- followed by the twelve-digit serial number of the server.

For example, for a server with the serial number **0000 0001 2345**, enter
http://**ks-000000012345** for Windows or
http://**ks-000000012345.local** for Mac.

A dealer who has a demonstration system plus one or more customer systems on the dealer's network can access the browser interface for each system using this method.

Installer Pages

The installer pages of the browser interface are used for configuring a system. To access the installer pages, add **/installer** to the address used to access the browser interface. For example,

http://my-kaleidescape/installer (Windows)

http://my-kaleidescape.local/installer (Mac)

Network Switches

Gigabit Switch

A Gigabit switch is recommended for any M-Class installation, and is required to watch more than one Blu-ray movie from the same server at the same time. Both server and player require a 1000Base-T connection for 1000Base-T throughput.

All-in-one devices that combine the functions of a router and a switch are generally less effective and not recommended. Kaleidescape does not recommend a particular network switch, because there are several quality network switches on the market; however the following switches were tested and worked successfully:

- Dell PowerConnect Series Gigabit Ethernet switches (27xx, 28xx)
- Cisco Small Business Managed Gigabit Switches (SRWxxxx)
- Pakedge Gigabit Switches

Multiple Switches

If more than one 1000Base-T switch is on the network, make sure all switches are interconnected using only 1000Base-T switches.

- Do not use 100Base-TX switches.
- Do not use a router as a switch.

Network Connections

Cat5, Cat5e and Cat6 network cabling can be used. Network cabling must have all four pairs of the cable terminated at each connector for 1000Base-T speed.

Kaleidescape strongly recommends the use of wired Ethernet network connections between servers and players. Wireless and powerline connections work well for providing Internet access to the Kaleidescape System, for connecting control systems, and for accessing the browser interface from a computer; however, a wired Ethernet network must be used for connecting the Kaleidescape components because there is little tolerance for latency while streaming movies or music.

Up to 54 megabits per second of network bandwidth is used while streaming a Blu-ray movie. Blu-ray Discs are not compressed when imported. Full audio and video fidelity are maintained.

1U and 3U Servers and 5U Servers (Model KSERVER-2500) can stream up to 5 Blu-ray movies over a well-designed 1000Base-T network at the same time. 5U Servers (Model KSERVER-2000) can stream one Blu-ray movie at a time because the network interface is limited to 100Base-TX.

Network Speed Test

Kaleidescape provides a network diagnostic tool to check the bandwidth between each player and the server. To run the Network Speed Test, go to http://my-kaleidescape/speedtest.html. The results are sent to Kaleidescape and appear on the system dashboard found on the Kaleidescape Extranet.

DHCP Reservations

Assigning Fixed IP Addresses Using DHCP Reservations

DHCP reservations provide a central point of management for all IP allocations at a site. With DHCP reservations, network parameters such as IP addresses, subnet mask, default gateway, and DNS servers are set in one place — at the DHCP server. If any of these parameters change, only the DHCP server has to be modified.

For most installations, the DHCP server built into the router is perfectly adequate.

The procedure to create DHCP reservations is device-specific. Refer to the router or DHCP server documentation for instructions. DHCP reservations are usually made using MAC addresses. To see MAC addresses for

Kaleidescape components, go to the **COMPONENTS** tab of the browser interface at http://my-kaleidescape/installer/components.html.

Resetting an M-Class Player to Use a DHCP Address

To remove a static IP configuration on an M-Class player, press the network **RESET** button on the back of the player to return the player to the factory default DHCP setting. The network **RESET** button is located just left of the analog audio connectors. (For non-M-Class players, the configuration must be changed on the browser interface **NETWORK** settings.)

To activate the **RESET** button, insert a paperclip in the reset hole. Press until the indicator on the right side of the **Network** connector starts blinking, then release. The player restarts with the factory default DHCP setting.

Assigning Static Network Addresses

If the installation site does not have a DHCP server, or if DHCP cannot be used for Kaleidescape components, IP addresses can be assigned manually. See Network Settings on page 88. Add a DHCP server temporarily to the site network to access the installer pages of the browser interface and enter IP settings that are valid for the local site network.

Appendix D
Installation Checklist

This installation checklist helps clarify the information and equipment required for a Kaleidescape installation, and verify that the installation site meets basic requirements.

Important First Steps

- ☐ Ask the customer to activate the system at www.kaleidescape.com/activate. Provide the serial number of one of the components, which is required for activation. The system can be installed and tested prior to activation.
- ☐ Verify that there is a working high-speed Internet connection at the site.
- ☐ Check that there is adequate power for all the devices being installed. The server requires a high-quality surge protector. A UPS is optional.
- ☐ Check that the planned locations for Kaleidescape components have adequate cooling. The operating temperature range for Kaleidescape components varies by component. See Appendix A on page 124.
- ☐ Create installation diagrams for the network and audio/video. Note the cable distances for all A/V, Ethernet, and control interfaces. Make sure these distances do not exceed specifications.

  For each Kaleidescape component, note the following information:

  - Device type
  - Device serial number
  - IP address
  - MAC address (listed on the **COMPONENTS** tab of the browser interface)
  - Control Protocol Device ID (if applicable)

  For the network, note the following information:

  - Subnet mask
  - Gateway address
  - DNS server addresses
  - DHCP address range
  - User name and password for router and switch

☐ Allow enough time to import the customer's content. It takes about 1 hour to import a Blu-ray Disc, 30 minutes to import a DVD, and 15 minutes to import a CD.

Tools and Supplies

Having the following items on hand can help the installation go smoothly.

- Extra Cat5e or Cat6 cables
- Extra HDMI cable
- Extra power cord
- Ethernet cable tester
- Cable ties
- Label maker
- Extra 4 port router
- Extra 8 or 16 port 1000Base-T switch
- Power strip
- Serial RS-232 cable (F-F DB-9 null modem cable)
- IR remote control (Kaleidescape Remote)
- Small television with appropriate inputs
- Screwdrivers, pliers, etc.

Equipment

☐ A single router or other device capable of issuing DHCP addresses. If the home network uses static addresses, then a list of the IP addresses of the network nodes should be available.

☐ 1000Base-T or 100Base-TX switch with enough ports for all devices. A 1000Base-T switch is recommended for all systems, and required if more than one Blu-ray movie or more than seven DVD movies will be played from a server at the same time.

☐ Cat5e, Cat6 or higher grade network and patch cables from the equipment rack to all Kaleidescape components.

☐ Audio and video cables in the lengths specified in the installation diagram.

☐ A computer with an Ethernet port and a browser running an up-to-date version of the Java software (current version of Java software can be downloaded from www.java.com).

Computer must also have a working serial port or a known good USB adapter in case a serial capture is required.

Controls and Displays

☐ If using a control system (Crestron, AMX, etc.) to control the Kaleidescape System, determine if the control will be done over TCP/IP, Serial RS-232, or IR.

If using control via TCP/IP, assign each Kaleidescape component a DHCP reservation on the DHCP server. Assign and document the following for all Kaleidescape components and the control system.

Device	**Serial Number**	**CPDID**	**IP Address**	**MAC Address**
(e.g., M500 Player	000000001234	3	192.168.1.175	00:02:1E:34:21:6A)
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

☐ List all the display devices and audio equipment that will be connected to the Kaleidescape System. Document the native resolution of the display devices

Players output in native format. This means the display must support both PAL and NTSC to view content in both video standards.

Room	**Player SN**	**Display**	**Resolution**	**Format**	**Video Conn.**	**Audio Connection**	**4:3 Stretch**
(e.g., Theater	000000001234	Runco VX-4c	1080p	16×9	HDMI	HDMI	No)
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

☐ If using a control system, download the latest documentation, programs and templates from www.kaleidescape.com/support/control-systems.